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Incorporating ARCHITECTURE & THE BRITISH ARCHITECT

THE BUILDER HOUSE, CATHERINE STREET, ALDWYCH, LONDON, WC2

Telephones: Temple Bar 6251-2-3-4

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REBUILDING THE CITY

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Item (1), the replanning and redevelopment of the large areas of destruction, their relation to the existing plan and the improvements likely to be effected in it later, demands the closest study if the City is to serve not only present, but future needs so far as they can be foreseen. Traffic circulation, the optimum density of the commercial and business population, the desirability of pedestrian precincts, the disposition of the individual buildings so as to secure better light and air, provision for car-parking over and above that provided in business premises, transport facilities—it is matters such as these that most closely affect the rebuilding of the City, and it is extremely doubtful whether any value is to be attached to the dogmatising of those who are not in possession of the necessary facts and statistics. Fundamental decisions on the planning of large areas yet have to be taken, and these are bound to affect the character of the buildings to be erected.

Most people seem to fancy themselves as architectural critics nowadays, and when architects themselves disagree, it is not surprising that there should be much conflict of opinion about elevations among laymen. Those who have the task of approving designs for new buildings in the City are not to be envied. Whatever they do they are bound to displease somebody. The public wrangling of architects about elevational design and visual effect is not particularly helpful and is likely, moreover, to lower the profession generally in the eyes of the public. The controversy is all the more regrettable because we have plenty of architects capable of designing the good modern buildings the City needs. If only, as a correspondent reflected in our last issue, some means could be found of bringing developers into touch with the right architects!

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Some good might come from the appointment of that supervisory architect for whom the City Corporation were recently advertising. He would have to be something of a superman, embodying a progressive outlook, good taste, strength of character, the tact of a diplomat and the persuasive powers of a first-class salesman. A policy of reasonable freedom within a restrictive framework administered by such a man might well produce satisfactory results. We hope it may be tried.

House, 1-5, Adam-st., WC2, internal decorations, South London Decorators, Ltd., 9, Streatham High-rd., SW16; Adelaide House, EC1, internal painting, South London Decorators, Ltd.; Houses of Parliament, SW1, new roof over corridor, east division lobby, G. E. Wallis & Sons, Ltd., 231, Strand, WC2. *Yorkshire:* Church-la., Pudsey, Nr. Leeds, erection of Post Office, sorting office and garage, F. Shepherd & Son, Ltd., Blue Bridge-la., York.

¶**London (War Dept.).**—Contracts placed by War Department for week ended August 6:—*Essex:* Building work, J. Moss & Son, Ltd., Colchester. *Dorset:* Roadwork, W. & J. Glossop, Ltd., Exeter; Painting and decorating, Arnold Sharrocks, Ltd., Ash, Near Aldershot. *Kent:* Miscellaneous, H. Goodsell, Maidstone: W. H. Holden, Rainham, Kent; Building work, Wm. Dunk, Ltd., Folkestone; Miscellaneous, A. J. Vincent & Son, Ltd., Gillingham, Kent. *Lancashire:* Miscellaneous, Harry Hague (Joiner & Builders), Ltd., Ashton-on-Lyne. *London:* Painting, Fields, Ltd., Richmond. *Middlesex:* Roadwork, Constable Hart & Co., Ltd., Richmond. *Midlothian:* Building work, H. Raitt & Sons, Millhill. *Norfolk:* Building work, Tooley & Youngs, Stalham. *Shropshire:* Electrical installation, Williams Bros. (Electrical), Ltd., Wolverhampton. *Surrey:* Cable Work, Cable Jointers, Ltd., Acton. *Yorkshire:* Painting & decorating, D. Humberstone & Co., Ltd., Louth.

Northumberland.—Tenders accepted by CC for building police houses: *Middlemiss Bros., Stepney Bank, Newcastle, for police houses at Hexham; *Chapman Bros., Lemington, police houses at Acomb; *A. Carr & Co., Ltd., Stoddart-st., Newcastle, police houses at Guide Post; and T. Gardiner & Son, Berwick, police houses at Scremerston.

Nottingham.—New factory at Kimberley for Wolsey, Ltd.: *Geo. Wimpey & Co., Ltd., London.

Orpington.—Single-storey office building, The Walnuts, Orpington High-st., for UDC. A. W. P. Willis, MIMunE, E&S:—

James Miller & Partners, Ltd., Pall Mall, SW1	£27.979
Ridgeway Contractors, Ltd., Orpington	27.945
Glassup & Co., Ltd., Orpington	27,873
Harrison Smith Buildings, Ltd., Birmingham, 6	27.309
J. Anderson, Orpington	27.190
W. J. Eaglen, Ltd., Mottingham	27.111
*Hawker-Smith, Ltd., Erith	25.874

Padiham.—Extensions to factory for Morley Products, Ltd.: *F. Mitchell & Son, Ltd., River-pl., City-rd., Manchester, 15.

Rotherham.—Erection of new Brinsworth strip mill at The Ickles, for Steel, Peech & Tozer. Bulk excavation: *Sir Alfred McAlpine & Son, Ltd., Hooton, Cheshire. Concrete foundations: *George Longden & Son, Ltd., Sheffield. Structural steelwork: *United Steel Structural Co., Ltd.

St. Marylebone.—Erection of offices at Wigmore-st., with floor area of 216,000 sq. ft. Est. cost £1m. Architect: C. H. Elsom, ARIBA, 44, Catherine-pl. S.W.1. Quantity surveyor: Ernest R. Babbs. *Higgs & Hill, Ltd.

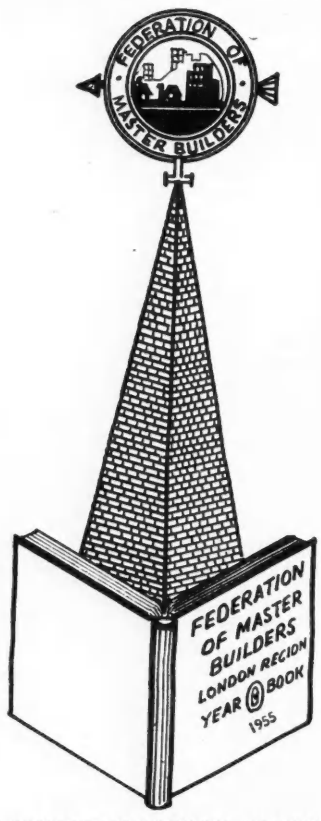
Sheffield.—Houses at Gleadless Valley estate for TC: (56) *J. W. Sivil, Ltd., Chesterfield, £80,989; (92) *M. J. Gleeson (Contractors), Ltd., Sheffield, £129,843.

Wallsend.—Erection of old people's home at Wallsend for Northumberland CC. Architects, Mauchlen, Weightman and Elphick, 12, Saville-row, Newcastle-on-Tyne: *Crawford and Huddart, Wide-open, Northumberland, £33,577.

Whitehaven.—Erection of church at Mirehouse for the Diocesan Board of Finance: *John Laing & Sons, Dalston-rd., Carlisle.

Wigan.—Erection of factory at Kitt Green, near Wigan, Lancs, for H. J. Heinz Co., Ltd. Architects, J. Douglass Mathews & Partners, 3, Ebury-st., SW1. Quantity surveyors, A. Boxall & Partners. Structural engineer, A. C. Aston. Civil engineers, John Taylor & Sons. Chartered surveyors, Dunlop Heywood & Co. Mechanical and electrical engineers, Buckle & Partners. Mining engineers, A. Leech, Son & Dean: *A. Monk & Co., Ltd., Warrington, Lancs.

Workington.—Erection of store. Murray-rd., for Workington Beehive Industrial Co-op. Society. Architects, Oldfield, Simpson and Saul. National Provincial Bank-chbrs., Workington: *Graham and Lawson, Ltd., James-st., Workington.



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E

Notes of the Week

THE NORTH AFRICAN SCENE

ONE of the fundamental reasons of the unrest in North Africa is bad housing. The "bidonvilles" are already notorious. They are huts made out of petrol cans which were left over by the millions during the war. These shack-towns spring up in a night, and the French administration is finding the problem of slum clearance almost insoluble. Another type of squalid housing, almost so primitive as to be incredible, are the huts known as "ghorbi." It is said that these are rent free, and no wonder, for the walls and roofs are made of a mixture of mud, straw and old motor tyres.

The French have been building modern flats in the Constantine area, where some of the worst of the recent atrocities were committed. These are intended for permanent residents, but cost so much to build that they could not be let at an economic rent. These flats are therefore let for about £1 a week, whereas the economic rent would be at least £5 a week.

Some interesting experiments in housing are being carried out. Near to Port Lyautey in Morocco some 300 acres of land were bought at the current market price by the French Government, and on this some 200 small houses were built in the new village of Haddada. These are in the Moorish style, two rooms looking on to a small courtyard with water laid on, and each costs less than £400. The unusual feature of this village is that no rents are charged and the householders do not own their houses. The village is owned collectively and contains a mosque, a medical centre and a school. Where such better housing is available, there is much less unrest, but at present even the most enthusiastic housing reformers see no signs of clearing away the "bidonvilles." The landlords of these are usually Moroccans and they have no difficulty in finding clients payings rents of about a shilling a week. The Americans are now moving in thousands of troops, and dollars may help towards solving North Africa's housing conundrums.

SHODDY BUILDING

TAKEN at its face value, the account printed last week by the *Manchester Guardian* of six weeks spent by an undergraduate on a London housing site is severe indictment of building methods. Waste, careless workmanship, bad leadership by foremen, indifference to safety precautions and refusal to employ even the simplest forms of mechanical aid: all these were noted by the observer who summed up the whole of the processes he saw as "slapdash."

No doubt there are building schemes which are running on lines similar to that described, though we should think it unlikely that such firms would remain long in business. But we should say that the *Manchester Guardian* is wrong in selecting this single instance to form a stick with which to beat the building industry. What must have struck any reader of the article is the absence of any reference to supervision by the architects or, indeed, by anyone other than the foremen who, according to the author of the article, "mostly were good men and worked hard at their particular job, but had no idea of simple organisation, of time or labour saving, and even less knowledge of men and how to get the best work out of them while keeping them contented." The author goes on to say: "The great need of the building trade seems to me to be firmer, more intelligent men in these positions of immediate authority and practical direction on the spot." With this, those who are concerned with the efficiency of the industry would agree, and our contemporary's strictures will not have been wasted if they induce firms of builders to take periodically a closer look at their site organisation.

NINE ELMS

DEVOTEES of early railway architecture will learn with regret that the original terminal building of the London and Southampton Railway at Nine Elms, Vauxhall, may be demolished. It was erected in 1837-38 from the designs of Sir William Tite and was a better, though smaller, work of architecture than the same architect's Royal Exchange. Nine Elms was at one time intended to be a Transport Museum for British Railways, and it seems rather irrational to destroy (without, so far as we know, any public announcement of the decision to do so) a building of such historical interest.

A British Railways spokesman told a representative of *The Builder* this week that a recent survey had revealed that the building was badly shaken during wartime bombing raids. Although eventually it would have to be demolished, there was no immediate proposal to pull it down. A dangerous cornice had to be removed recently. It was not now considered likely that the building would be used as a railway museum as was at one time suggested.

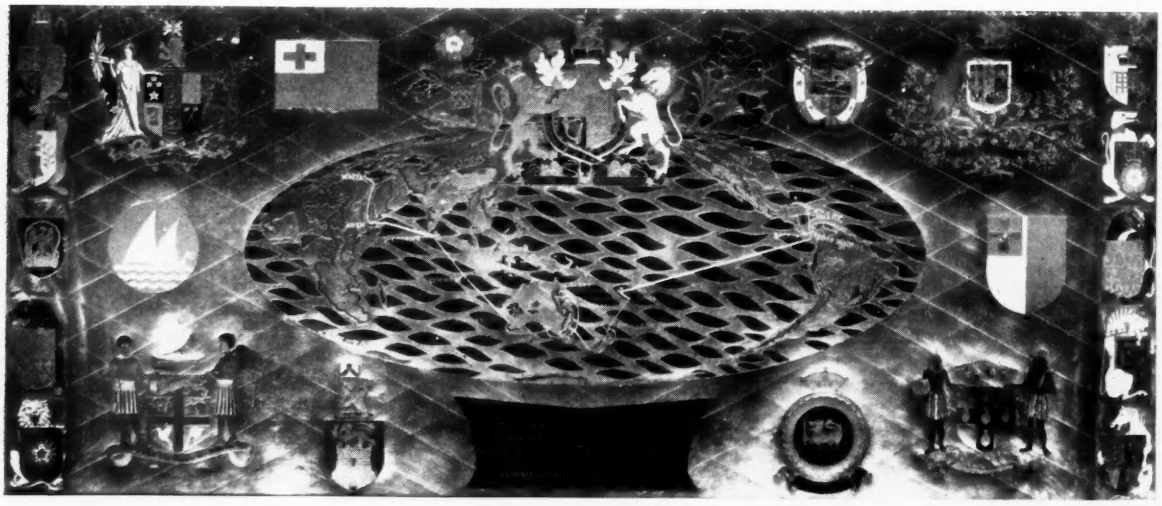
"BETWEEN TWO DECADES"

FROM a point mid-way between two decades, 1945-65, an important series of seven talks in the BBC Third Programme is to try, first, to assess some of the past

COMING EVENT

THURSDAY, SEPTEMBER 1.

BBC THIRD PROGRAMME.—Dr. I. L. Martin, FRIBA, will speak on paintings by the Dutch architect, Piet Mondriaan. 7.35 p.m.



COMMEMORATIVE PANEL OF ROYAL TOUR IN SS "GOTHIC."—To commemorate the ship's service as Royal Yacht on the 1953-54 Commonwealth Tour of HM the Queen and the Duke of Edinburgh, this panel in polished aluminium sheet has been placed in the Shaw Savill liner "Gothic." Designed and executed by F. H. Coventry, the panel is said to possess a clear-cut brilliance combined with justness of spacing. On the map, the "Gothic's" route and ports of call are the only human signs to appear and physical features, sea, rivers, mountains, provide the decoration of this projection of the globe. The coats of arms and badges are those of the countries visited. The panel is flanked by ten of the Queen's Beasts.

10 years' achievements and failures in town planning and architecture and, secondly, to consider ideas which may find support in the next decade.

The first half of this series will deal with town planning and the opening talk (on September 1) by H. Myles Wright, FRIBA, Lever Professor of Civic Design in the University of Liverpool, will deal particularly with the failure to prevent urban sprawl.

The second talk will be given on September 10 by Robert Gardner-Medwin, FRIBA, Roscoe Professor of Architecture in the University of Liverpool. Taking Coventry as his chief example, he will discuss the great opportunity afforded by bombing to redevelop city centres. The third talk, on September 17, will be given by Colin Boyne, editor of the *Architects' Journal*, who will speak about the new towns.

Architecturally Great Britain has made some notable contributions in the fields of school and industrial building during the past 10 years. The second half of this series will deal with some of these, and the speakers will include Lionel Brett, FRIBA, Planning Consultant to Hatfield New Town, who will talk about housing; Michael Smith, of the Nuffield Architectural Research Unit, on schools, and Edward D. Mills, FRIBA, on factories and power stations. The final talk will sum up the series.

PIET MONDRIAAN'S WORK

DR. J. L. MARTIN, FRIBA, architect to the LCC, is to speak on Thursday, September 1, in the BBC's Third Programme, about the exhibition at the Whitechapel Gallery of paintings by the distinguished Dutch architect, Piet Mondriaan, who died in America in 1942.

LOANS FOR HOUSE PURCHASE

HOUSE PURCHASE is becoming steadily more costly for the great majority who lack the capital to buy outright. The recent increases in mortgage rates announced by the building societies together with the increases in rates of interest on advances made by local authorities under the Small Dwellings Acquisition Acts made known on August 2, might have seemed sufficient to go on with, but only last week in a new circular (summarised on page 361) the Ministry of Housing announced further increases.

The new circular states that the Treasury has directed that the rates of interest on loans advanced to local authorities shall now be 4½ per cent. and 4¾ per cent. for periods of under and over five years respectively, which has the effect of making the rates for loans from local authorities for house purchase for the same periods 4¾ per cent. and 4¼ per cent. compared with the previously increased rates of 4 per cent. and 4½ per cent., respectively. As it is doubtful if the resources of those who wish to own their houses can keep pace with these increases, the moral for the house-building industry, if it is to continue to prosper, would seem to be to keep a more than ever vigilant eye on rising costs.

CORRESPONDENCE

REBUILDING THE CITY

To the Editor of *The Builder*

SIR,—I feel that I cannot let the statements made about Bucklersbury House by Mr. Jasper Salwey in your issue of August 12 go unchallenged. Mr. Salwey seems to have rushed into print without first ascertaining his facts.

The Church of St. Stephen, Walbrook, far from being suffocated, is to be opened up to the public view, since not only is the new building line in Bucklersbury to be set back some 45 ft., to bring it in line with the tower of the church, but Walbrook itself is to be widened by a further 25 ft. at this point, which will keep the new building some 45 ft. away from the church. It will then only remain for the City Corporation to purchase and demolish the existing triangular building in front of the Mansion House for the opening up of St. Stephen's Church to be completed.

With regard to Mr. Salwey's three reasons for banning this important building, the first one I have already dealt with; the second is answered by the fact that parking space for 100 cars is to be provided in the basement of Bucklersbury House, with space for a further 30 to 40 cars in the various courtyards above ground. As to the third reason, Mr. Salwey should be aware, from the numerous articles which have appeared in the Press, that it was a physical impossibility to retain the Temple of Mithras on its original site, and that it is to be re-erected in due course in the courtyard in Queen Victoria-street, where it will be on view to the public in perpetuity.

O. CAMPBELL-JONES [FRIBA, FRICS]
Skinners' Hall,
9, Dowgate-hill, London, EC4.

To the Editor of *The Builder*

SIR,—In his article on this subject, Mr. Salwey says: "If all or most of the buildings [in the City of London] are to be in the so-called 'contemporary' manner, Wren churches erected between the wars will necessarily appear as antiques, so bleak, angular and ungracious is the present day style." Do old buildings necessarily suffer from being surrounded by buildings in the style of a later age? Do the Georgian houses in Salisbury-close make the Cathedral seem a mere antique? Does the Gibbs building at Kings College make the Chapel look archaic? In Salisbury, Cambridge or any old city buildings were erected in the style of their age; till about 1830 they were usually good, and the older and the newer buildings usually gained by contrast. What are so discordant in our cities are the more recent buildings trying to ape their elders and betters, usually with disastrous effect on the latter. No greater insult could be bestowed on a decent old building than to have an inferior and probably inflated copy next door; yet how many decent buildings have to suffer thus!

In the City, surely the Wren steeples and other old landmarks will stand out by sheer contrast to contemporary buildings around, provided the adjacent buildings *are* contemporary. Surely the lovely spires of St. Mary-le-Bow, St. Vedast and Christ Church, Newgate, will look better against a background of lightly-constructed modern buildings, however tall, than overpowered by vulgar mountains of commercial stone.

The City skyline of Wren is lost forever; if the City steeples are to survive as features let them do so as monuments of grace, dignity and solidity against the "bleakness, ungraciousness and angularity" of the necessarily functional office buildings overtopping them. Let offices be offices, not imitation palaces, and let the qualities of buildings whose significance is not utilitarian be enhanced by contrast, and not overpowered by the structures of more mundane purpose around.

D. W. LLOYD
2 Bedford-place, Maidstone.

To the Editor of *The Builder*

SIR,—As the author of the article on the very serious subject of rebuilding the City of London, may I be allowed to answer the letter signed "Spero" published in your last issue. This letter is exactly what I expected my article to call forth. It is the employment of the threadbare and really erroneous argument that to use the classic *motif*—which means the Orders—is to go backwards.

As one who for over fifty years has learnt, studied, travelled, practised, taught, written, and lectured, also endeavoured to read all the erudite books on the subject of architecture which have appeared in my time, I venture to state that the Orders of Architecture are good not only for the past but for all time: they are among the eternal verities which were revealed to the unclouded brows of the Greeks. They are something fully resolved, and embody the basis of design; not all the brains of the present-day or the future will add to them. When needing to design great

" I was in my last job just six months—one month making tea and five months sick ! "

***The Association of Municipal Corporations has recommended its member councils to limit new appointments, save in special circumstances, to officials who have been more than six months with their employing authority.*

buildings we must resort to the lessons and principles which they teach.

The question is, do we desire architecture or do we desire to hurriedly clutter up the City with so-called contemporary buildings? Personally, I and a number of architects and professors of architecture I happen to know desire to see the City architecturally designed both in plan and elevation and not made the trial ground for modern experiments in office building. I am all for progress on the right lines, and the modern manner of building, with its new materials and new techniques, is particularly well suited to certain types of buildings needed to-day. Doubtless, when this new manner is fully evolved it may well suit certain future purposes—but not, please, in the City of London.

I would like to say that I also could point to a number of architects well versed both in technique and aesthetics who, if given the opportunity, could design and carry out noble buildings of which the Corporation, the public, and posterity would be proud and well pleased. I would conclude by suggesting that aspiring present-day designers should read, mark, learn and inwardly digest, if they have not already done so, the contents of a most illuminating and important little work entitled "The Process of Architectural Tradition," by W. A. Eden, MA, ARIBA, who was a lecturer in Civic Design in the University of Liverpool.

JASPER SALWEY.

Eagle Hurst, Westbourne, Bournemouth.

ENGLISHMEN'S CASTLES

To the Editor of *The Builder*

SIR,—The editorial in your issue of July 29 calls for some comment, especially that part in which you refer to the suggestion that all plans should be prepared and signed by a registered architect.

On the face of it this sounds very nice, but how does one guarantee that every architect will prepare plans that are satisfactory in all respects? Architects are all trained, no doubt, but one remembers the remark of one famous architect concerning another even more famous, that "his houses, however *inconvenient* and *expensive*, always *look right*." With that in mind, the person wanting an economic and convenient house would justifiably be suspicious of any suggestion that he be *compelled* to use an architect.

Personally I admire the work of many architects in external appearance but have seen some awful "clangers" dropped in respect of efficiency in internal design.

With regard to the suggestion that building societies should impose a standard, who is to fix that standard (apart from the question of sound workmanship)?

I have seen a case where a building society devalued a house, built to a reasonable "conventional" design and appearance because modern structural materials were used as against brick. The fact that these materials gave an insulation figure three times better was, apparently, of no account.

R. GREENFIELD.

Kirton, Boston, Lincs.

PRODUCTIVITY AND PRICES

To the Editor of *The Builder*

SIR,—On July 15 you gave figures for labour costs in the building industry in recent years. This was in an article which mentioned that the basic figures emanated from the Ministry of Works.

On August 19 you gave another set of figures which had been printed in an article in the August issue of the Treasury's "Bulletin for Industry."

The strange thing is that there appears to be a rather large discrepancy between the two sets of figures—see the following comparison:

	Index of Output		Labour Cost per Unit of Output	
	July 15	*August 19	July 15	*August 19
1952	100	100	100	100
1953	108	106.79	99	102.48
1954	112	107.76	100	109.09

*Adjusted to make 1952 = 100 datum.

Is it possible to reconcile these figures by telling us how they are built up, as something may be included in one and not in the other?

G. HONEYBELL, ARICS.

100 The Mall, N14.

METAL WINDOW FIXING

To the Editor of *The Builder*

SIR,—May I correct one point in your Labour Correspondent's interesting article on "Demarcation Disputes" which appeared in the August 12 issue of *The Builder*. It is quite untrue that "carpenters and joiners had traditionally fixed all window frames, whether wood or metal."

For the last 55 years, and probably longer, a great many metal windows have been fixed by specialist craftsmen known sometimes as "fitters" and sometimes as "window fixers." They are essentially metal mechanics and have more in common with smiths and plumbers than with woodworkers. There are several of these window fixers employed by my own firm who have over 40 years' service. The so-called tradition that all window frames are fixed by joiners is a convenient myth which has been invented by the joiners themselves and has no evidence to support it.

MICHAEL HOPE, Director,
Henry Hope and Sons, Ltd.

Smethwick, Birmingham.

BUCHANAN'S BUILDING, HOLBORN

To the Editor of *The Builder*

SIR,—Many will regret the disappearance of Buchanan's building on the south side of Holborn, east of Fetter-lane, where it concealed the old Hall of Barnards' Inn and the Mercers' School.

It was war-damaged, but one had not expected its total demolition, which was something of a shock. It was an "arts-and-crafts" building with a Gothic feeling by Leonard Martin (originally of Treadwell and Martin), who continued his deeply moulded uprights to, and sometimes through, the eaves or verge line; this fact caused the late W. E. Davis (former contributor to *The Builder*) to say that his facades resembled joinery. In particular, the fine lantern-tower, with delicate tracery of Spanish renaissance feeling enclosed between the four diagonal corner buttresses, was an aspiring and (as far as one knows) unique feature in London, though that of the Imperial Hotel, Russell-square, is somewhat similar. Appended, in default of a better, is a sketch, done by oneself when a student.

H. V. MOLESWORTH ROBERTS.

CLERKS OF WORKS' SALARIES

To the Editor of *The Builder*

SIR,—I have read with interest your article on page 280 of your issue of August 12 on the subject of salaries of clerks of works, as discussed by the Salop County Council. I would like to point out to this Council that the salary of 17 guineas per week in this day and age is not unusual. The salary of a clerk of works is usually based on the size and importance of the contract and if a first-class man is required, the salary has to be attractive.

One rather important fact was not mentioned in the article, and that was the situation of two of the three contracts, for which in recent weeks the Salop Council advertised for clerks of works at 15 guineas per week. I can only assume that the Council were forced to raise the salary to get a first-class man in these somewhat remote places.

MICW.

A NICE DISTINCTION

To the Editor of *The Builder*

SIR,—I was, to say the least, amused on perusing the ground-floor plan of "The Artichoke" public house, illustrated in your issue of August 12. Has not some social blunder been committed? The toilet off the *public* bar says *ladies*—that off the *saloon* bar, *women*.

C. RODWAY, Personnel Officer,
Holland & Hannen and Cubitts, Ltd., (North West Area).

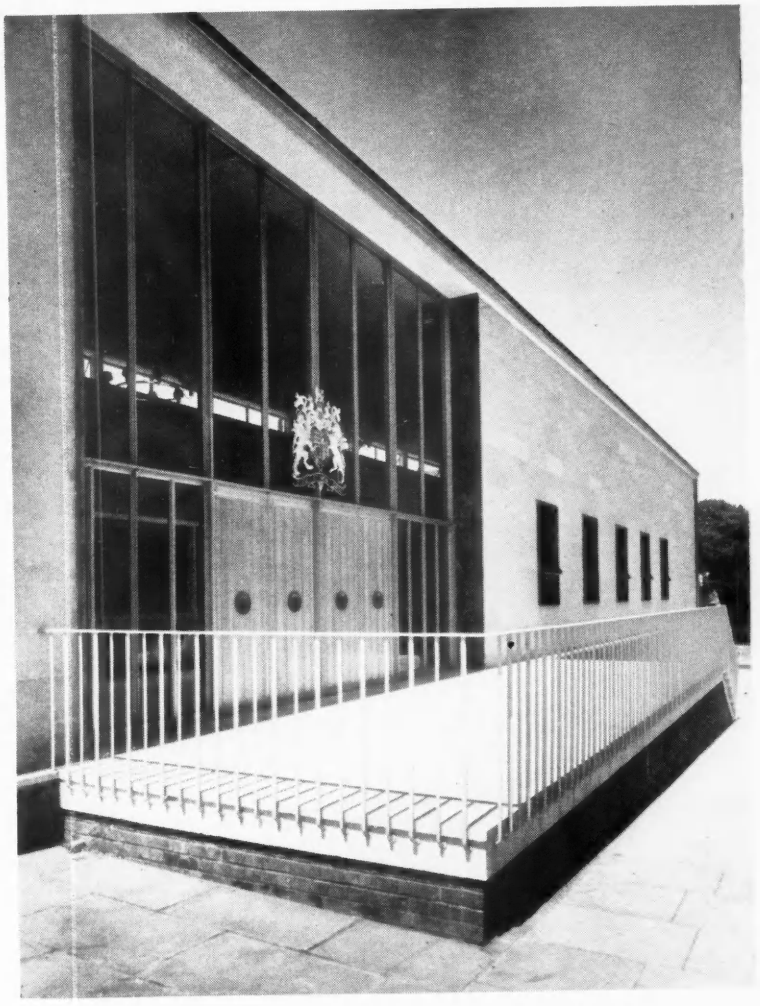
St. Mary's-road, Garston, Liverpool, 19.

***We have passed on Mr. Rodway's amusing letter to Messrs. Stewart & Hendry, the architects, who reply: "Clearly the draughtsman concerned thought that in this topsy-turvy world all the best people now use the Public Bar rather than the Saloon Bar!"

MODERNISING OLD PROPERTY

CUC Active in Bristol

OVER 300 replies were received within 48 hours from an advertisement by the Coal Utilisation Council in a Bristol paper last week, in which the Council offered to fit free hot-water, bathroom and indoor sanitation services to an old house. The advertisement marks the beginning of the committee's campaign to find a house suitable for a "Modernise with Solid Fuel" exhibition which it hopes to stage early next Spring. After a short spell of exhibition, the renovated house will be restored to its owner.



Public entrance front. Below: View from south-east.

Courts of Justice, Highgate, for Middlesex County Council

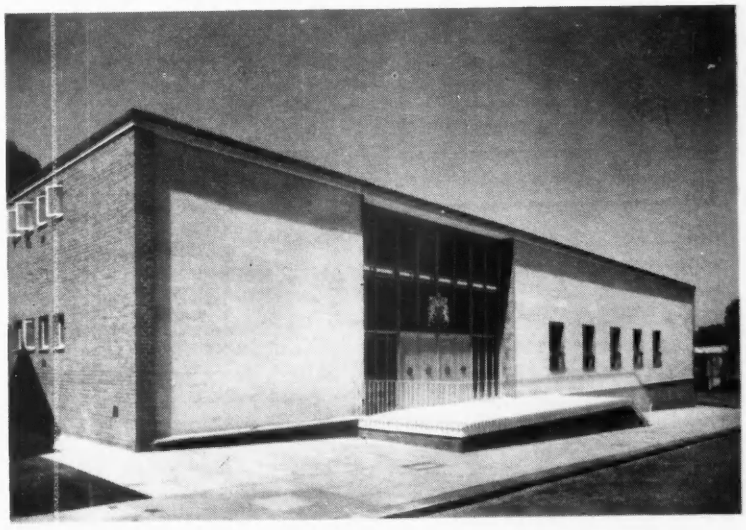
County Architect
C. G. STILLMAN, FRIBA

Area Architect
D. R. DUNCAN, ARIBA

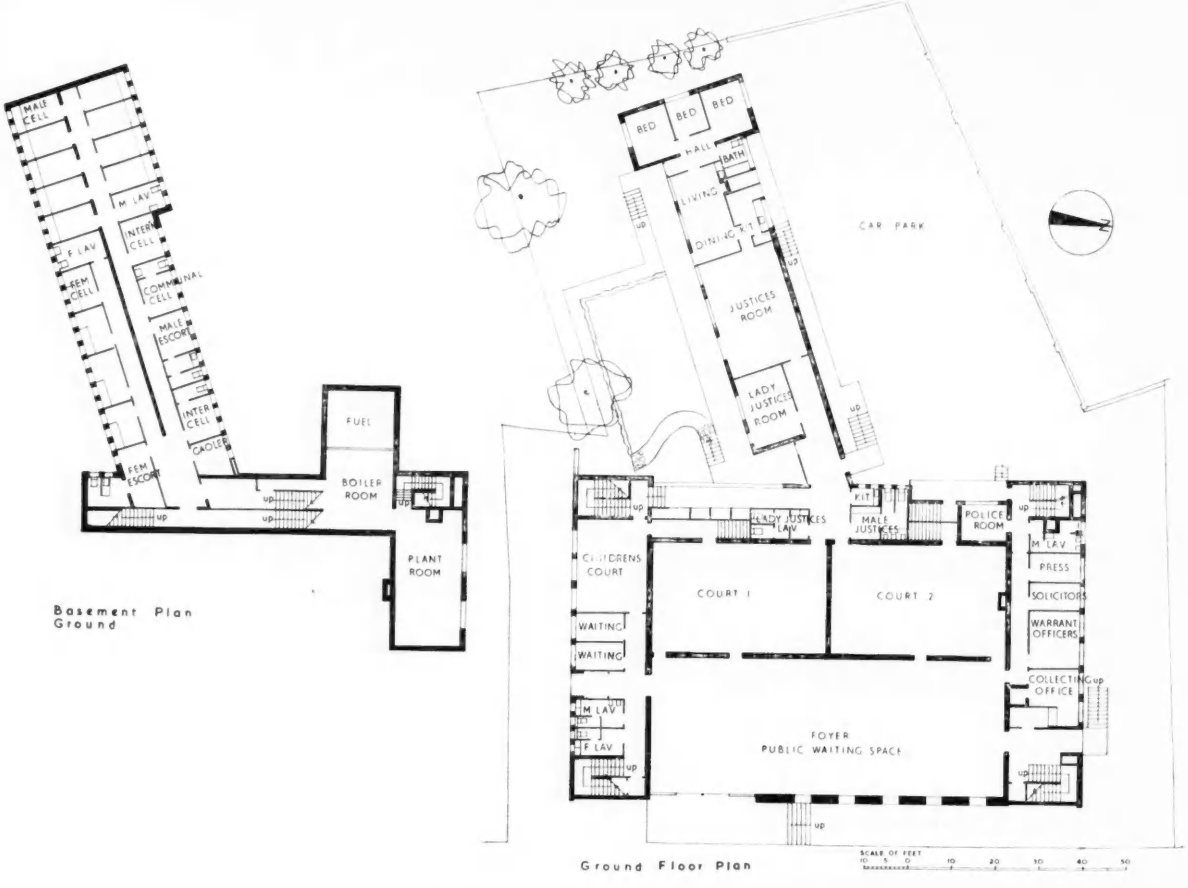
Senior Architects
T. W. PATERSON, ARIBA,
& R. C. LUSTY, ARIBA

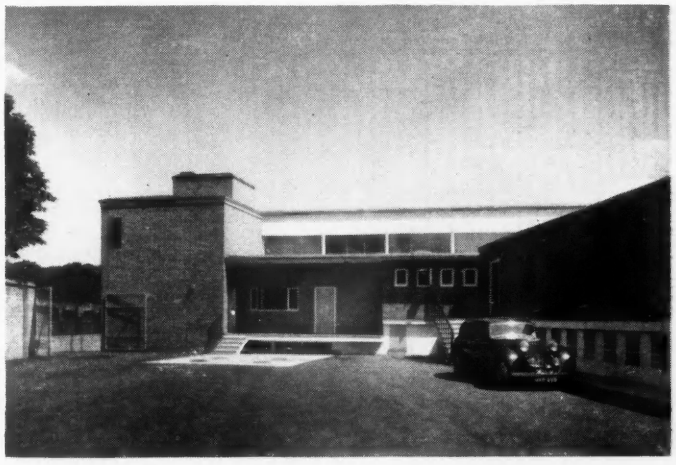
Builders for Phase 1
PRESTIGE & CO., LTD

Builders for Phase 2
WALTER LAWRENCE & SON, LTD.

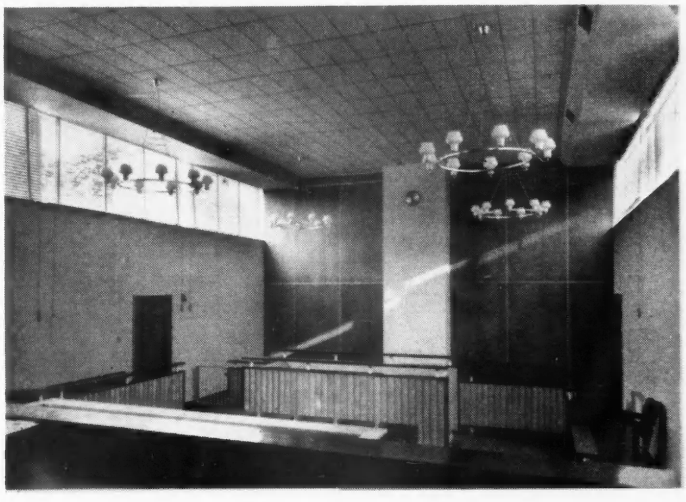


View in Court No. 1.

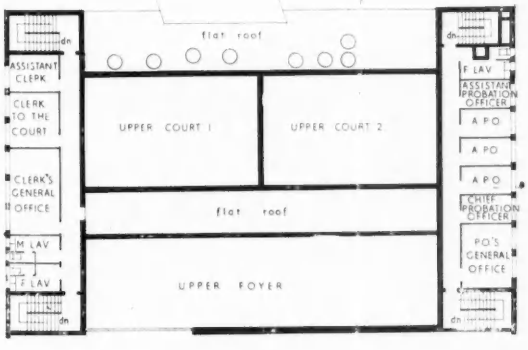




View from car park.



View in Court No. 1, towards body of court.

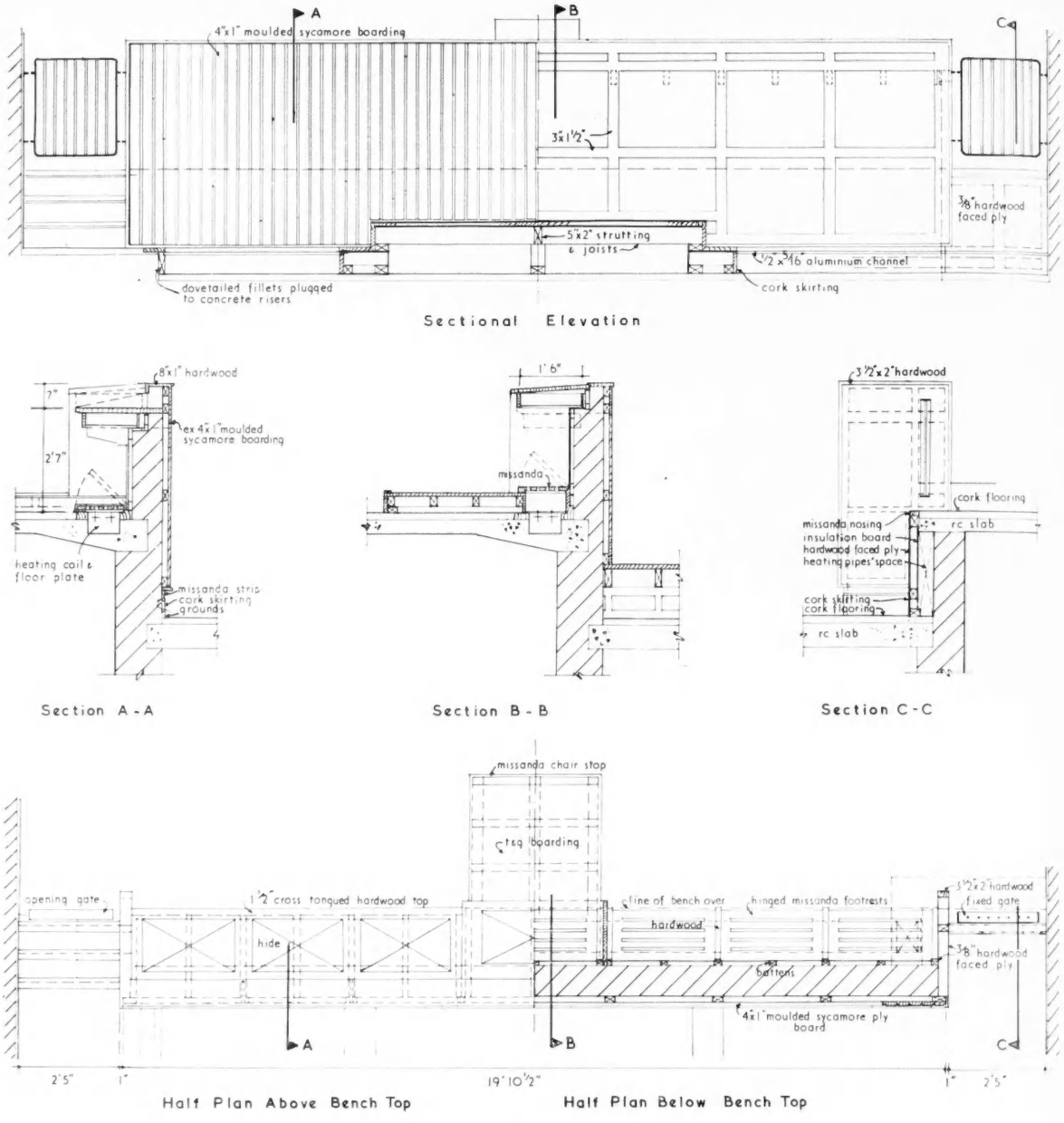


First Floor Plan

THE new courthouse replaces one on the same site destroyed by a flying bomb. It also destroyed the police station next door, which still has to be rebuilt. The courts have met at Hornsey Town Hall since the bombing.

The new building provides two Magistrates' Courts, with retiring rooms for the justices, a juvenile court, offices for solicitors and Press, warrant and collecting officers' rooms (the latter with a strong room). On the first floor are offices for senior and assistant probation officers, and for the clerk of the court and his staff; in the basement are cells for men and women prisoners, two interrogation cells and rooms for male and female escorts and gaoler.

The two court rooms, in addition to the provision for magistrates, clerk of the court, barristers and



Details of court furniture and fittings.

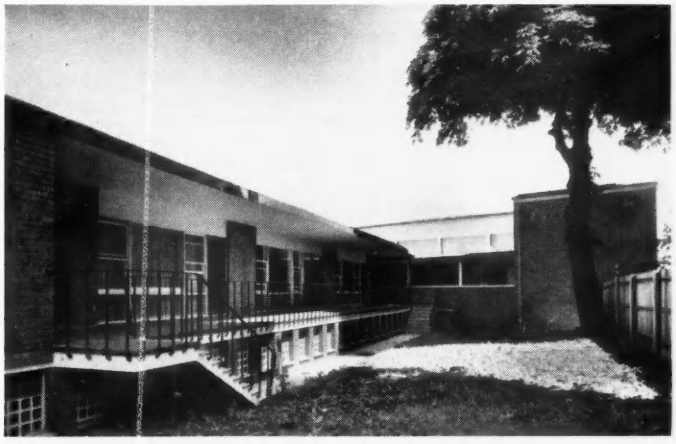
solicitors, probation officers and witnesses, prisoner or defendant, each have seats for about 30 members of the public, and the Press. The juvenile court, which has waiting accommodation attached, has a separate side entrance, and normally meets on days when the Magistrates' Courts are not in session. The justices have a separate entrance and a terrace outside the retiring rooms, overlooking a small grassed area.

The prisoners' entrance, at the rear of the building, leads directly to the cells.

Each cell is provided with a concrete bench; observation windows are provided, in addition to the larger opening in the door for meal trays. Natural lighting is by glass bricks, and heating is by a ceiling panel in each cell.

Finishes: Special attention has been paid to quietness in all areas adjoining the courts; the entrance hall flooring is of cork, and ceilings are of acoustic tiles; the staircase from the cells to the courts is rubber floored. Floors in offices and other rooms are of wood block.

Walls generally are plastered and painted in eggshell



View from south.

finish. Cement enamel is used throughout the basement and in the cells. The east and west walls of the entrance hall are faced with marble, and plywood panelling in Mexican cedar has been incorporated in the courts, foyer and Justices' rooms.

A caretakers' flat is provided.

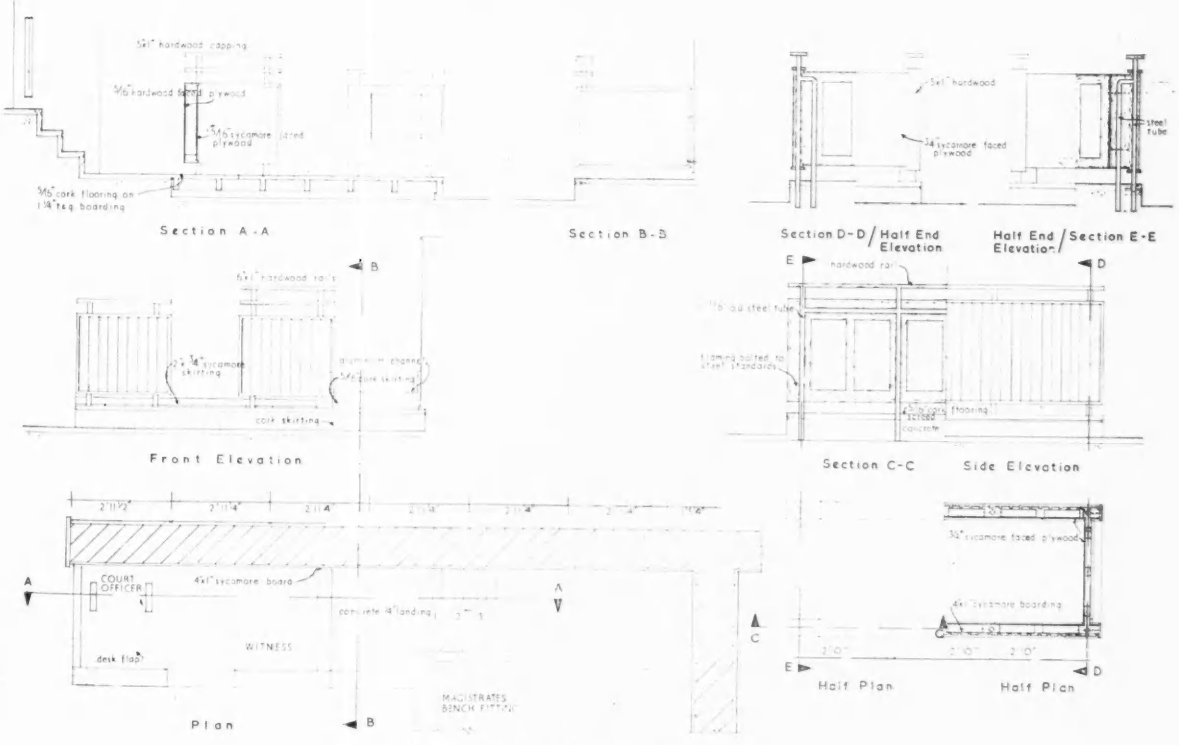
Sub-contractors for Phase 1 were:

Bricks, H. J. Greenham (1929) Ltd.; cell windows, Lenscrete Ltd.; sanitary fittings, Shanks & Co. Ltd.; folding gate, Acme Metal Works Ltd.; cell doors, J. Gibbon Ltd.; flooring, Horsley Smith & Co. Ltd.; heating and ventilation, G. N. Haden & Sons Ltd.; ironmongery, Comyn Ching & Co. Ltd.; electrical work, Griersons Ltd.; ventilation grilles, Greenwood Airvac Ltd.; balustrading, William Pickford Ltd.; slate copings, Setchell & Sons Ltd.; structural steelwork, C. S. Construction Ltd.; r. c. work, Concrete Engineering Ltd.; dome lights, T. & W. Ide Ltd.; paint, I.C.I.

Sub-contractors for Phase 2 were:

Structural steelwork, C.S. Construction Ltd.; ventilation grilles, Fredk. Braby & Co. Ltd.; acoustic ceilings, Horace W. Cullum & Co. Ltd.; tiling, Carter & Sons (London) Ltd.; ironmongery, Dennis Waring & Co.; heating and ventilation, G. N. Haden & Sons Ltd.; electrical work, Express Powerlite Ltd.; Portland stone, Bath & Portland Stone Firms Ltd.; metal windows, West Bromwich Casement & Engineering Co. Ltd.; metal screen, J. Gibbon Ltd.; marble, J. Whitehead & Sons Ltd.; crest, H. H. Martyn & Co. Ltd.

COURTS OF JUSTICE, HIGHGATE, FOR MIDDLESEX CC



Details of court furniture and fittings.

THE REPAIR AND RECONSTRUCTION OF WAR-DAMAGED CHURCHES

By GERALD COBB, FSA

The following article, which deals with the repair and reconstruction of war-damaged churches, with special reference to the City of London, formed the subject of a lecture given by Mr. Cobb to the Historic Churches Preservation Trust last May.

THE devastation of the late war has left us with a legacy of difficult problems of reconstruction and repair, about which, not being an architect, I can express myself fairly freely.

STYLE

If a church is only damaged, problems of style do not arise, but if it is more than half destroyed, the vexed question of form and style becomes insistent—should it be made good as before, or should it be rebuilt in a contemporary manner ?

For example, at St. Olave, Hart-street, the arcades were largely inact, the aisle walls remained on the south side and clerestory window-heads, etc., were recovered from the debris. All these were incorporated in the new St. Olave's, which is thus the same church as before, albeit with new roof and furniture. But at All Hallows, Barking, although certainly more severely damaged than St. Olave (there was so much more of it), four bays on the north side and one on the south with the clerestory above remained standing and could have been preserved and duplicated, but, alas, they were thrown down by the then architect against expert advice. Now a new "Gothic" church is being uneasily grafted into the outer shell of Victorianised aisle walls and 17th-century brick tower. A complete contemporary rebuilding, except for the old tower, which should be retained, would, I feel, be preferable.

If there were signs of the definite emergence of a settled style of architecture expressive of our age, such as we possessed up to say 150 years ago, the answer to the question of style would be easy. We still have to ask whether we want traditional, stone "Gothic," as at Liverpool, or mixed "Gothic" (brick, stone, concrete) as at Guildford, or "concrete functional" (shall I call it ?) as at Coventry.

But in view of the welter of new materials and methods and new modes of expression that now engulf us, I would opine, in most cases, for a contemporary building, provided, of course, you can get a sensitive architect. For it is only through new methods and materials that a new style can develop—imitation of former styles is seldom satisfactory and can never lead to a living modern architecture.

But there are always exceptions ; and if a devastated church were outstanding for its architecture or monuments, etc., it might be desirable to rebuild it as it was before, especially if it were a classical building. As an example, if St. Stephen Walbrook or St. Mary Woolnoth had been destroyed, it would, I feel, be unthinkable that their remarkable and beautiful interiors should be lost to the world by not being reconstructed as nearly as possible in facsimile. (I am speaking of the structures, not of the fittings, of which more hereafter.)

An example of another kind is Chelsea Old Church, which is now being reconstructed to its old appearance, so as to house its remarkable series of monuments, fortunately recovered from the ruins of the church by Mr. Walter Godfrey. But in this case, it will be interesting to see whether the exact imitation of Gothic chancel, Classical nave and nondescript tower will be a success and whether the old atmosphere can be recaptured—it certainly deserves to be, for the old church was a lovable building.

That this case *may* be a doubtful experiment is largely due to the Gothic element involved. The medieval period with its architecture and outlook was so different from our own that it is, I feel, well-nigh impossible for us to build successfully in the Pointed style, in spite of the gallant efforts of the Gothic Revival to resurrect and acclimatise it. But with the Baroque and later classical styles it is a somewhat different matter, for the ancient Orders of architecture, upon which they are all ultimately founded, consist of forms repeated in facsimile about the building, thus facilitating successful imitation of the different parts. (Again I am speaking of the structure and its repetitive ornament, not of the fittings with their individual decoration—a very different thing.)

STEEPLES

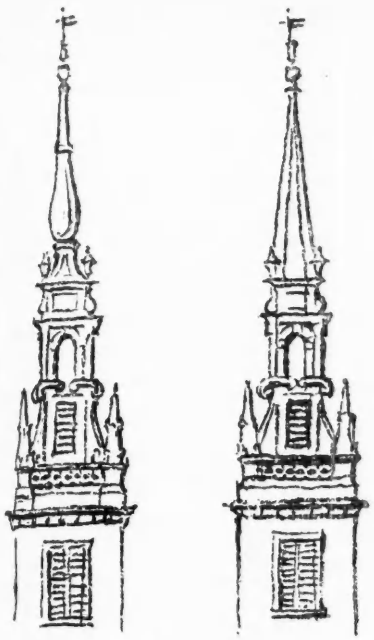
In many cases of damaged City churches the only exterior loss is that of the lead-covered spire or turret. At St. Swithun this steeple was a regular spire of medieval outline, and I had the awesome experience of seeing it complete but incandescent on the night of its destruction, May 10-11, 1941. This, I fear, may not be rebuilt, together with that of St. Mildred, Bread-street. But the spires of St. Lawrence Jewry, St. Nicholas Cole Abbey, St. Augustine and St. James, Piccadilly, are to be reinstated. The last named, though not by Wren, was certainly not 19th-century as I have seen it stated. It was, apparently, from a design by one Wilcox, a carpenter of the parish at the time of the church's erection. It is to be rebuilt, I understand, to a novel design by Prof. A. E. Richardson, PRA.

St. Augustine's steeple, originally one of Wren's most volatile examples, was partly rebuilt about 1830, when the upper half—an Indian-club-like feature—was replaced by a plain spirelet quite unsuited to the mobile lower half. The original, and very charming, design should certainly be reproduced as nearly as possible when the tower is restored*, as should also the curious trumpet-shaped spire at St. Nicholas Cole Abbey. At St. Lawrence Jewry the spire-like turret was composed almost entirely of straight lines and should easily be reproduced.

As for turrets or bell-cages, these are generally simple affairs, often very attractive, and they should be reconstructed as before. This has been done exactly at

*It is unfortunate that there seem to be no really accurate drawings of St. Augustine's steeple before alteration.

Two views of the tower of St. Olave's, Hart Street, showing the bell-cage as before the war (left) and as reconstructed.



Steeple of St. Augustine's, Watling Street, before (left) and after the alteration of c 1830.

St. Giles, Cripplegate, by Mr. Godfrey Allen, but at St. Olave, Hart-street, a cage has been built which is larger than the former one and looks very unfinished, as the wooden skeleton has been left unclothed except for its leaden roof. At All Hallows, Barking, according to the picture in the porch, we were promised a tall, slender, un-English-looking spire in place of the former small square turret, which I think would be a pity, but I understand the matter is now being reconsidered. At St. Mary Aldermanbury the tower and whole exterior had been quite spoiled by incongruous Victorian additions, and it is to be hoped these will be omitted at the restoration.

One other point—a small one. At St. Mary-le-Bow, the wooden louvres were slightly shaped somewhat like the shelves of an old-fashioned china cupboard. Let us hope that this feature will be renewed when the tower comes to be restored.

Although the question may not arise, I would say something about the completion of unfinished steeples. This is a risky business and seems seldom to have been satisfactorily done. St. Mary Redcliffe, Bristol, is an example—the spire seems too tall and slender for so massive a tower, and old photographs show the tower as much more comely when it was topped by the stump only of the spire with pierced parapet and vane. At Norwich, Street's completion of St. Peter Mancroft tower is very inadequate with its diminutive pepper-pots at the angles, to lead up to which the original right-angle buttresses were suddenly curtailed. And, abroad, between the wars, the intended spires of the cathedral and another church at Ypres were completed with a multitude of fussy crochets. Far better to have been content to leave them unbuilt, as was done at Rheims where the formerly uneven stumps of spires and spirelets were merely made equal.

The attempt to add to an old tower with modern materials was tried at Rouen over 100 years ago, when a soaring spire of iron Gothic tracery reaching to about 480 feet was reared on the cathedral central tower in place of the early sixteenth-century wooden steeple destroyed by fire in 1822. It was designed by Alavoine the next year, and was long in building. I own I do not like the idea; but, possibly, if the design had been a better one, it *might* have been a success. As it is, it is too tall and slender and is ruined by the excrescence at the top. Let us hope no one will try and add a concrete summit to an ancient tower.

While speaking of steeples, I would mention one flagrant instance of senseless alteration. The Bell Harry tower at Canterbury used to be one of the most beautiful creations of Gothic art, but in 1902 Caroe substituted eight huge louvre-boards in each opening of the bell-chamber in place of many small ones, with the result that the window-form of the openings is largely obscured and the restfulness of the whole design destroyed.

Coming back to London, the City churches have always been jostled by secular buildings and the attempt to isolate them would be a questionable one—their proportions, in most cases, would not stand it. For Wren designed his steeples to be seen above the house tops—they were thus generally much higher than the church was long (at St. Augustine's, for instance, the height was over twice the church's length). For a church to be seen from any distance its length should exceed its height—even our tallest spire (Salisbury) and tallest tower (Boston) adhere to this rule (unlike Cologne, which has *two* spires 512 feet high against the church's length of about 480 feet. No wonder it looks all spires!).

Then, again, Wren usually restricted any exterior ornament (or even good ashlar work) to the towers as the sides of his churches were seldom wholly detached from other buildings. At St. Stephen, Walbrook, for instance, before the war, houses abutted on its south side and over the west porch, and on the north side the little clerk's house (used as a bookseller's shop) masked the base of the tower. The few walls that could be seen were undressed stone (formerly plastered)—"Never was so sweet kernel in so rough a shell." That, I feel, was rather nice, for one gave a gasp of surprise and delight on entering! Now the south side is exposed and has to be refaced, which will emphasize its baldness, and the blank lower half of the tower looks painfully bare.

The prevalent desire to expose buildings and open up new views of them by demolishing picturesque accretions has done much harm and results in emptiness and a loss of the feeling of discovery that was one of the charms of old towns. At York, in a plan for the City published some years ago, the one remaining portion of the City wall that has trees on both sides of it (a deliciously shady walk) is shown with trees, back gardens and houses (some of them nice pieces of architecture) along its outer face all removed and their places taken by a preposterously wide thoroughfare roaring with buses and other traffic! Extraordinary mentality that prefers such things!

MATERIALS

As to materials, they should be as good as can be obtained. The policy of using any old materials and cementing them over, as was advocated recently in the case of St. Brides, is not to be recommended. I cannot speak from a technical point of view, but personally I prefer timber ceilings over old churches either open or plastered over as the style may require. If concrete be used, it should not be made to imitate wood.†

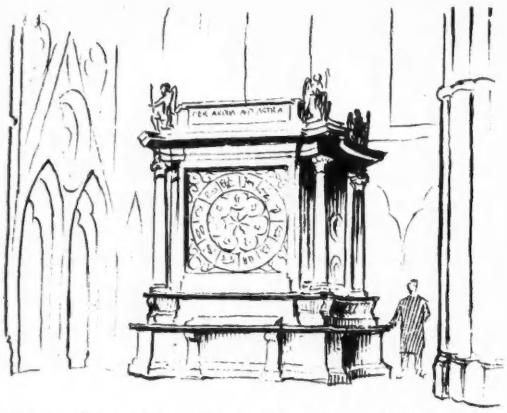
The principle of employing one material and making it appear like another is, of course, a dubious one, but formerly in certain cases it was done without scruple, and where there is an old example is should be preserved. As instances, I would mention the remarkable plaster fan "vaulting" in Wren's St. Mary Aldermary or the seventeenth-century ribbed ceiling imitating vaulting formerly over the nave of St. Botolph's, Boston. This last should certainly have been repaired instead of being replaced by a flat ceiling as was done between the wars. The excuse pleaded original form against later deception. Apparently the "restorers" thought the ceiling eighteenth century, but it seems to have been a good deal earlier (see SPAB Report for 1930). Anyway the marks of the springers remain on the walls as a reproach (unless they have since been obliterated). Then there was the "graining" of wood and the "marbling" of stone—the latter a very common seventeenth-century and later practice. Old photographs show St. Clement, Eastcheap, with marbled pillars and pilasters, and at St. Benet, Paul's Wharf, such marbling remained until a year or two ago when I am sorry to say it was whitewashed over. Perhaps the most imposing example of marbling occurred at St. Paul's Cathedral where, there being no reredos, the great pilasters of the Main Order ranging round the apse were painted to represent lapis lazuli—very fine they must have looked! It is curious to record that in Victorian times these same pilasters were not only denuded of their colour, but their very stones were replaced in Varallo marble, which has now in the present reparation been changed back again to stone.

FURNISHING

This should be appropriate to the church's status, or former status. For instance, St. Bartholomew the Great is structurally the choir of an erstwhile priory church, and this fact justifies its furnishing as a cathedral or college chapel with its longitudinal seating; but when this is applied to a purely parish church as is proposed for St. Brides (and possibly elsewhere) it becomes very out of place.

The eccentricity reminds me of two other examples. At All Saints, North-street, York, under the late rector, one was presented with the astonishing spectacle of the nave devoid of benches or

†*The concrete roof at All Hallows, Barking, resembles a wooden one, but I am assured the beam- and plank-like forms are all functional ones.*



Proposed RAF Memorial, north transept, York Minister, traced from an illustration in the Appeal brochure. The memorial is in the form of an astronomical clock.

pews, but dotted over with groups of kneeling chairs about an arm-chair; and at this church and even more at All Hallows, Barking before the war, one got the feeling of being in a curious ecclesiastical museum! I have the greatest regard for the founder of Toc H and his beneficent activities, but one can only hope that his new church will be less cluttered up than was the old one!

At the numerous demolitions and restorations of City Churches which disgraced Victorian times, splendidly carved fittings, fine ironwork, etc., of the seventeenth and eighteenth centuries were dispersed, not only to other London churches, but far into the provinces. The organ from St. Benet Fink went to Malmesbury Abbey, the font from St. Mary-le-Bow to Westcliff-on-Sea (apparently, very recently), the pulpit from St. Antholin to Blandford Forum but its reredos is at Nunhead. The reredos of St. Matthew's, Friday-street, is in Polesden Lacy House, while the altar-piece of the Temple Church, thrown out about 1847, at length made its way to the Bowes Museum, Barnard Castle, from which it has now been reclaimed for further use in its original home. These and dozens of other fine fittings are scattered about London and beyond, and efforts should be made to reclaim as many as possible for use in the rebuilt City churches. Mr. E. E. Smith and I have compiled a card-index of these dispersed fittings and we shall be only too glad for it to be made full use of by all concerned in church restoration in the City.

If enough of this old furniture could be collected it were better, perhaps, completely to fit out three or four churches rather than to give a pulpit here or a reredos there, for then the problem would arise as to how to design the rest of the fittings in relation to the old work. For I do not favour imitation of the old carving—technically it could be done (at vast expense), but the result would almost certainly be lifeless, as witness the modern reredos in St. Michael and St. George Chapel in St. Paul's which is richly carved in imitation of Grinling Gibbons and his school, the foliated pillars being more or less exactly copied from those supporting the Bishop's Throne in the Choir (two originals are sufficient—one does not want four copies as well!). More successful are the remarkable carvings at St. Mary-at-Hill by W. Gibbs Rogers, 1849, which, at first sight, are indistinguishable from the old work, but on examination one finds that he has contrived to give them a certain distinction by their very bold projection.

At St. Olave, Hart-street, as now rebuilt, the mixture of styles in the chancel is painful to behold, for the Holy Table (from St. Katherine Coleman) is Chippendale, the altar-rails richly carved Wren period, while the choir-stalls and reredos, recently completed, are nondescript and do not even agree with each other!

Not very long before the war, this church was provided with a simply designed classical reredos that was very pleasing, though the painting it framed could have been better. I feel that here, perhaps, is the answer to the problem, for, as I pointed out before, classical is a repetitive style and easy to reproduce, and it does not "date" like other styles. I grant you it may be dull if not skilfully handled, but I think it safer than "Gothic," even in a medieval church, and as for "contemporary" furniture, that would be completely without ornament, for there is no "modern" style of decoration at all expressive of our age. Sculpture and painting, yes, but not ornament. Of course, in some cases perfectly plain fittings might be suitable, but in most cases some kind of richness is required beside a picture or statue or bas-relief, and this classical details certainly supply.

It may here be objected that the remarkable metal screenwork at York (by Sir Walter Tapper and Bainbridge Reynolds) and the Warriors' Chapel, Westminster Abbey (by J. N. Comper) is fine modern design; but it is not modern, or English either, for with one exception it is obviously inspired by the elaborate sixteenth-century grilles or "rejas" of Spanish cathedrals, with early Renaissance detail. The exception is the screen enclosing the Duke of Wellington's Regimental Chapel at York, which is from Italy—an almost exact copy of the chapel screen in the Palazzo Pubblico at Siena. Hence, although very handsome, these grilles are out of place in an English cathedral, having no affinity with our traditional art. At York, they interfere with fascinating cross-views that were such a feature of the spacious transepts, which, according to an appeal brochure, are to be still further cluttered up by an RAF Memorial in the form of a vast quadrangular Astronomical Clock! Also to make way for one of these chapels the fine eighteenth century marble font with wooden cover and lovely iron railings was thrown out of the Minster.

With these things in mind and in the present absence of any real contemporary idiom of ornament, I feel we should be as frugal and restrained as possible in the furniture and embellishments we introduce into our great churches. Let these grand buildings speak for themselves, and with the money thus saved let us preserve as many as possible of the so-called "redundant" parish churches that are being allowed to go to ruin in our older cathedral cities. Rich in history and craftsmanship, they should be regarded as precious satellites of the great Mother Church, not as useless buildings to be got rid of. They could be open daily for private prayer, with an occasional service, as at Holy Trinity, Goodramgate, York, or they might be passed on to other Denominations. I understand that St. Anne and St. Agnes, Gresham-street, has been offered to a Russian Congregation and that they are hesitating to accept it as it is not central enough. Why not offer them St. Swithun's, opposite Cannon-street Station, which, unlike St. Anne's, has no surviving fittings to speak of. For a reredos like that at St. Anne's, with the Commandments, etc., in English, would have to be removed or altered when the church came to be adapted for a Russian Orthodox ritual.

STAINED GLASS

Colour is the essence of this beautiful medium. Windows of white glass with a few coloured figures or motives scattered about them look rather anaemic, and if economy is imperative it is perhaps better to have a few windows fully

A recent photograph of St. Olave's, Hart Street, looking west, showing the massive oak organ screen executed from a design by the late Mr. Ernest Glanfield.

coloured and the rest plain. For these last, white hand-made glass as has been used at St. Paul's is preferable, not bulbous as at St. James's, Piccadilly or the wish-washy "cathedral" tinted glass so often seen.

For Wren and other classical churches the many delicate hues—specially the violets—often seen in modern stained glass are quite unsuitable. The early 17th-century windows of Lincoln's Inn Chapel, the North Rose of Westminster Abbey (1722) (mutilated though it is) and the great West Window there (1735) are good examples of the sort of colouring which looks well in a classical church—and indeed elsewhere. Rich red, blue and golden yellows predominate, with a certain amount of green, perhaps a little purple and with white glass to set it off—what more does one want?

Heraldry lends itself peculiarly to stained glass, but it is essential to have it designed by one who understands the art and its great decorative qualities; for inaccurate or badly-drawn heraldry can spoil any window or other work of art. Mr. A. E. Buss has given us some very good examples in his windows at St. Olave's, Hart-street.

THE ORGAN

Lastly, in parish (or Guild) churches the organ should be in the west gallery—not dumped down at the east end of north or south aisle as was beloved by the Victorians, or at the west end, but divided, as is proposed at St. Bride's. If the pipes are to be displayed they must have a case, and here again, I feel, that plain classical may help us—no case at all is intolerable. At St. Olave's an interesting experiment has been tried. The organ is at the west end, but hidden by a massive oak screen from a design by the late Mr. Ernest Glanfield. It is not unpleasing and it would be interesting to learn the source of his inspiration.

As for lighting, I have not studied it sufficiently to give an opinion, beyond the general dictum that efficiency and unobtrusiveness should be its main characteristics, but I own I do not like the curious fittings resembling chocolate boxes on columns to be seen in one famous London church!

My main pre-occupation in this rambling and somewhat critical paper has been to urge humility and self effacement upon architects and all concerned with the reparation and upkeep of our historic churches.

With new churches let imagination have full play, but in dealing with our priceless inheritance of ancient churches—embodiments of the living architecture and craftsmanship of past ages, the less we do to them, beyond necessary repair and conservation, the better.

If Victorian accretions, which are generally deplored nowadays, have to be removed, let us replace them simply, not with elaborate works which may, in their turn, not stand the test of time.

NORTH RIDING PLAN APPROVED

The Minister of Housing and Local Government has approved with modifications the development plan for the County of the North Riding of Yorkshire.

FRANK LLOYD WRIGHT

Collected Lectures and Writings

THIS publication* brings together in a single volume, plentifully illustrated, lectures and writings of Frank Lloyd Wright which singly have been spread over a number of years. His gospel has not changed. He stands, one may say, where he always stood; but, as one might expect, in the technical application of his own principles his work reveals a series of sustained progressions.

Frank Lloyd Wright is regarded by common consent as one of the great leaders and as one of the earliest exponents of what is called "The Modern Movement." He does not tell us, or tells us very little, about how it is done. He knows far too much about it to make an attempt of that sort. He does not point a short cut to modernity; he knows too well that no short cut exists. Perhaps the wide-boys of architecture may be disappointed.

What he does do, by reiterated explanation and exposition, is to try to make clear to us his own attitude and approach to problems of architecture and building as he sees them at the present day. That is not an easy thing to do. His approach is not a simple one, not merely a matter of fact; it is, necessarily and inevitably, intricate and complex. One may perhaps question whether his own style of writing, involved and decorative, his habit of playing on the sound of words, however good it may be as publicity, helps to an understanding of what he has to say. But when the frills and wrappings have been unravelled, the thought, the philosophy, is there. It is like penetrating the froth of ornament over his own Imperial Hotel at Tokyo to discover the great conception which it partially conceals.

WRIGHT'S PHILOSOPHY

Taking the simplest part first and expressing it as simply as possible—although it is notorious how quickly one can be involved—what he has to say is this. Treat your materials fairly, use each according to its nature. Take full advantage of your tools—machines are tools. Do not expect the tool to do what it is not adapted to do. Be master of the machine, do not let it master you. Build with economy—the right way to do a thing is the simplest way, the most straightforward way. Let things look like what they are; do not try to make them look like something else. In this sense avoid imitations. Solve problems, in planning and construction, by relation to immediate and contemporary conditions and not by relation to tradition or precedent. Neither tradition nor precedent is founded on modern conditions.

So much, then, in a very simplified form, for the simplest part of his creed. That much then, can be taken as a kind of materialistic, factual foundation for his philosophy. Given this, what really matters to Frank Lloyd Wright is the imponderable. The living core of the whole matter is what he calls romance. Romance to him, and he carefully defines it, means a quality of living, a kind of inter-relationship between all living things and all things created by the human spirit. It may be a new use of the word to us, but when he uses it that, by and large, is what we are to understand. That is the kernel of the whole idea; that true art has no separate and contrasted existence; that there is about it and what we call "nature" a one-ness or wholeness; that, in his own phrase, "art is as much nature as we ourselves are natural." Without that imaginative insight into the unity of life no great art can be created.

Wright's knowledge of history is wide but not profound. He is almost blind to the significance of the great epoch of cathedral building in medieval Europe, an epoch which achieved triumphantly much of what he tries to say. He fails to grasp the purport of the Renaissance. He confuses renaissance with revival. He mocks us for fishing in the pond of our preference while he himself fishes unblushingly in a less familiar pond of his own choice. But whatever his vagaries or inconsistencies may be, his work, impressive in its volume, is infused throughout by this intense, imaginative insight into the essential unity of Life and Art. It is in that inner radiance that the greatness lies.

JAMES BURFORD.

*** "The Future of Architecture," by Frank Lloyd Wright. Published by The Architectural Press. Price 50s.

COMPETITIONS OPEN

HOUSE FOR THE PROFESSIONAL MAN.—No site specified for this residence, which is to cost about £4,250, including normal external works. Promoters: Tretol, Ltd. Prizes: £250, £150 and £100. Assessor: Mr. Clifford Culpin, FRIBA. Conditions from Tretol, Ltd., Tretol House, The Hyde, NW9. Deposit: £1 1s. Closing date: November 8, 1955. *August 19, 1955.*

COUNCIL OFFICES AT ENNISKILLEN, NORTHERN IRELAND.—Promoted by Fermanagh County Council. Cost not to exceed £45,000. Premiums: £500 and £200. Assessor: Mr. R. S. Wilshere, MC, FRIBA, FRICS. Last day for questions: 4 p.m., September 5, 1955. Closing date: 4 p.m., December 20, 1955. Dep. £2 2s. Conditions from the Secretary, Fermanagh County Council, Enniskillen, Co. Fermanagh. *July 8, 1955.*

GOVERNMENT BUILDING: UGANDA.—Legislative council building at Kampala. Promoted by Government of Uganda. Assessor: H. Thornley Dyer, FRIBA, AMTPI, advised by K. Begg, FRIBA, chief architect, Uganda Public Works Department, and G. T. Bragg, AMIMunE, ARICS, town engineer, Kampala. Premiums: £750, £500 and £250. Applications by August 20, 1955; questions by August 31, 1955. Closing date: January 21, 1956. Conditions from Clerk of Legislative Council, PO Box 2278, Kampala, Uganda, East Africa. Deposit: £3 3s. *July 29, 1955.*

** *The date in italics refers to the issue of* The Builder *in which fuller details were published.*

BOOK RECEIVED

OUTRAGE. By Ian Nairn. (London: Architectural Press, Ltd.) Price 12s. 6d.

NEW YOUTH HOSTEL

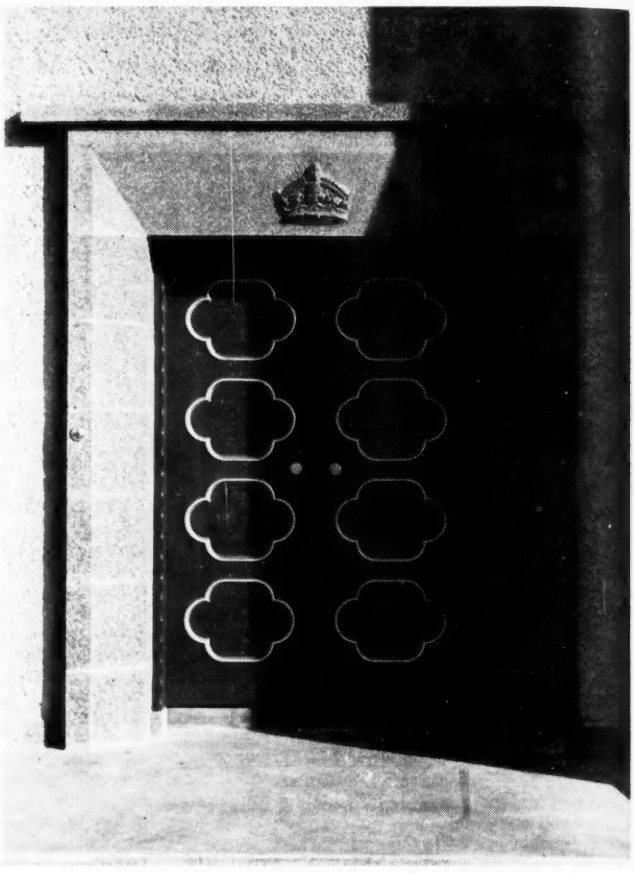
The Pembrokeshire County Council are purchasing property—Castell Mawr, near Strumble Head, in the Pembrokeshire Coast National Park—with the aid of a grant from the Minister of Housing and Local Government under the National Parks and Access to the Countryside Act, 1949. The property will be resold to the Youth Hostels Association for use as a hostel. The property was built in 1939 and is situated on the coast adjacent to the Pembrokeshire long distance coastal footpath, and commands magnificent views.

Greyfriars House: A Crown Office Building, Aberdeen

STEWART SIM, DA(Edin), FRIAS, a Senior Architect in Chief Architect's Branch, Ministry of Works, Scotland

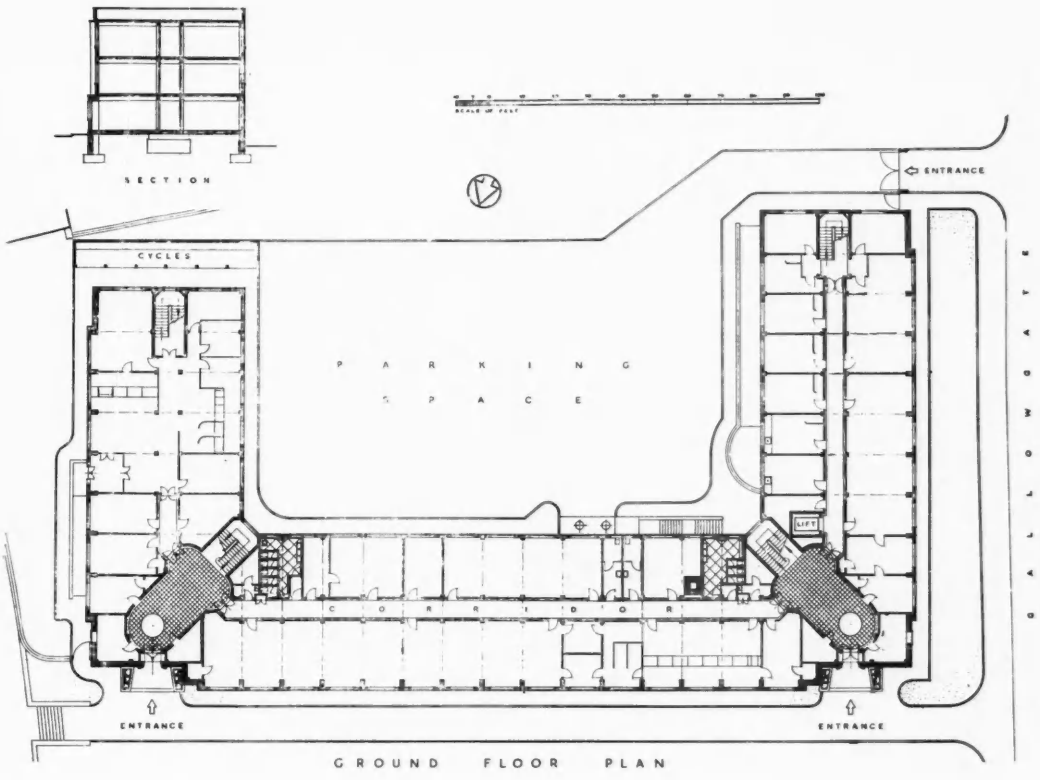
T. TOPPING, Clerk of Works

ALEXANDER HALL & SONS (BUILDERS), LTD., Builders



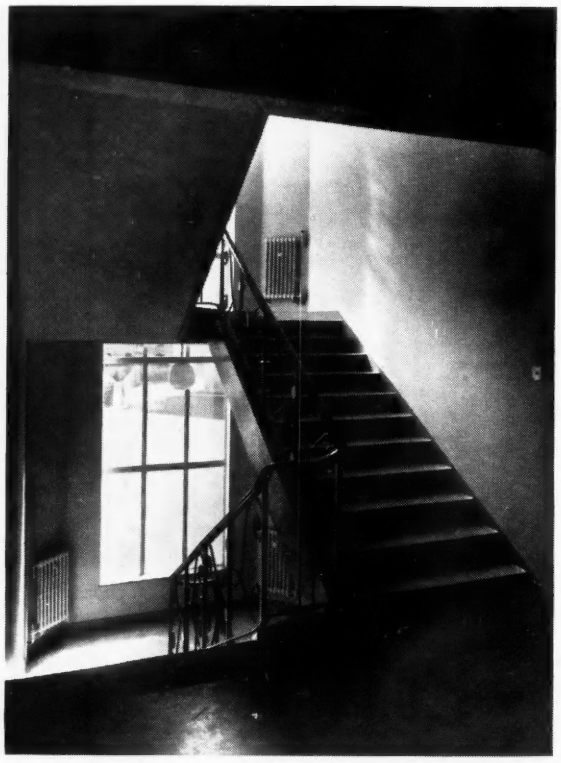
The main entrance door.

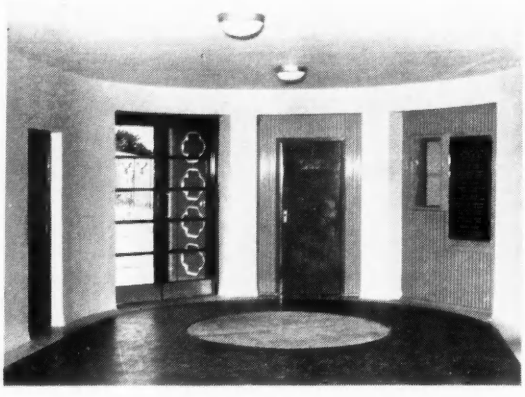
A general view.



GROUND FLOOR PLAN

Detail of Courtyard front.





THE new offices, erected on part of an open site in Gallowgate, Aberdeen, provide accommodation for Government departments, including Inland Revenue, Department of Agriculture for Scotland, Ministry of Labour and National Service, Ministry of Pensions and National Insurance and the Ministry of Transport and Civil Aviation. The staffs of these departments will total upwards of 400 people.

The building contains three floors and basement; it has a main frontage of 246 ft., and is U-shaped in plan, the rear area enclosing parking space for vehicles. There are entrances at the ends of the main front, with elliptical halls and staircases giving direct access to the central corridors serving offices on each floor. Supplementary stairs are provided at the ends of the rear wings. The design provides maximum open floor areas at each level, which are suitably subdivided by light de-mountable partitions to provide individual rooms, thus allowing maximum of flexibility of user. The colour scheme throughout is based on a theme of varying tones of blue and grey.

The building is of reinforced concrete frame construction with outer cavity walls of brick rendered externally, and salient features carried out in granite dressings. An example of this is given in the main entrance illustrated. In fact, an effort has been made to use local materials to the maximum. The reconstructed granite features on the building are made from material from local quarries, the concrete aggregate is of crushed local granite, as is the rendering material, and the bricks used are from Kemnay.

The building was designed by Mr. Stewart Sim, DA(Edin.), FRIAS, a Senior Architect in the Chief Architect's Branch of the Ministry of Works, Scotland, and Alexander Hall and Son (Builders), Ltd., of Aberdeen, were the contractors. The Clerk of Works was Mr. T. Topping.

Sub-contractors and suppliers engaged were: Steel reinforcement, Colvilles, Ltd., Glasgow, Square Grip Reinforcement Co., Ltd., Newhouse, and Barnes and Bell, Ltd., of Glasgow; synthetic granite, Geo. W. Bruce, Ltd., Aberdeen; asphalt roofing, Val de Travers Asphalt Paving Co., Ltd.; asphalt tanking, Wm. Briggs and Sons, Ltd., Dundee; steel partitions, Ayrshire Dockyard Co., Ltd., Irvine; timber doors, Brownlee and Co., Ltd., Glasgow; steel doors, McLean and Co. (Metal Windows), Ltd., Hamilton; terrazzo work, Toffolo Jackson and Co., Edinburgh; ironmongery, N. F. Ramsey and Co., Ltd., Newcastle-on-Tyne; wrot iron work, T. Hadden, Edinburgh; and plastics notice boards, Arnoplast, Ltd., Glasgow.

Engineering services were supplied by the following: *heating*, G. N. Haden and Sons, Ltd., Aberdeen; *electrical*, Jas. Scott and Co., Ltd., Dundee; *lifts*, Evans Lifts, Ltd., Leicester; and *automatic stokers*, Clyde Fuel Systems, Ltd., Glasgow.

Top : A staircase.
Centre : Typical office.
Below : Entrance hall looking to outer door.

CROWN OFFICE BUILDING: GREYFRIARS HOUSE, ABERDEEN

News of the Week

RAF MEMORIAL

THE DUKE OF EDINBURGH has been invited to unveil a memorial in York Minster on November 1 to nearly 20,000 officers and airmen of the RAF who were killed or missing while operating from RAF bases in the north-east of England. The memorial, jointly sponsored by the British Legion and the RAF Association, is in the form of an astronomical clock and will be in the chantry under the Five Sisters Window. Below the clock will be a book of remembrance containing the names of those who lost their lives.

More than 16,000 invitations have been sent out to next-of-kin all over Great Britain, Australia, Canada, New Zealand, South Africa, France, Norway, and Belgium. Designed by Professor A. E. Richardson, President of the Royal Academy, the clock has been made by Dr. R. D. Atkinson, of the Royal Observatory.

CENSUS OF PRODUCTION

THE BOARD OF TRADE published on Monday, August 15, the section on the Report on the Census of Production for 1951 on the Building Materials Trade (Volume 1, Trade L) (HMSO, price 2s.). The report relates to establishments engaged wholly or mainly in the treatment of stone (including manufacture of monumental masonry) and in the manufacture of slate goods (except slates for roofing and damp courses), prefabricated concrete products, artificial paving stone, asbestos cement goods, lime, plaster of paris, etc. Firms that treated stone obtained from their own quarries are covered by the report on Non-Metalliferous Mines and Quarries (other than Coal, Salt and Slate) (Volume 1, Trade B).

The building materials trade, states the report, corresponds to minimum list heading 29(2) in the Standard Industrial Classification together with heading 29(3) apart from manufactured fuel, roofing felts, plumbago crucibles, ceramic glazes and frits, graphite and mica goods.

For 1951, manufacturers of asphalt who were using the whole or the greater part of their own production in their own contracting work are classified by the Board of Trade to the Building and Contracting Trade (Volume 12, Trade A), whereas for earlier years they were classified to the building materials trade. Except for 1935, figures given in the report for earlier years have been amended to exclude those firms whose net output in 1948 amounted to £4,146,000.

"THE QUEST FOR COLOUR"

THE fourteenth Designers' Conference of the British Colour Council's interior decoration and design division will be held at Oriel College, Oxford, from September 12 to 16. The president of the British Colour Council, Sir Ernest Goodale, and the chairman, Mr. H. G. Dowling, will be present at the beginning of the course.

"Quest for Colour," the theme introduced at the Council's spring conference, will be continued. A panel of speakers will answer questions on this subject after several lectures have been given on its various aspects. An illustrated lecture will be given by Miss Jane B. Drew, FRIBA, and Mr. E. Maxwell Fry, FRIBA, on "The Use of Colour in Architecture in the Tropics." Non-members should write for details to the BCC at 13 Portman-square, London, W1.

RICS PRESIDENTIAL TOUR

THE PRESIDENT, Mr. W. R. Brackett, OBE, and the Secretary, Brigadier A. H. Killick, CBE, of the Royal Institution of Chartered Surveyors will leave England by air on Tuesday next, August 30, for an official tour of the branches of the Institution in Africa. They will be accompanied by Mrs. Brackett.

NEW JEWEL HOUSE

EXCAVATIONS have begun at the Tower of London in preparation for the building of the new jewel house. The Civil Estimates for this year provide £1,000 towards the cost of the work, the whole of which is provisionally estimated to be £95,000.

COID APPOINTMENT

THE President of the Board of Trade has appointed Mr. F. Shepard Johnson, JP, to be a member of the Council of Industrial Design to take the place of Mr. A. E. Hewitt, CBE, who has resigned. Mr. Johnson is President of the British Pottery Manufacturers' Federation.

NEW DESIGNATION

FOLLOWING its recent change of title, it is announced that full members of the Royal Society for the Promotion of Health (formerly the Royal Sanitary Institute) may use the designation "MRSH."

DAMPNESS IN FLATS

GREENWICH BOROUGH COUNCIL are to experiment in some of their flats in an endeavour to prevent dampness, believed to be caused by condensation.

One set of experiments relates to the installation of an individual central heating system and the other provides for the application of vermiculite plaster.

A CAMBRIDGE LABORATORY

A NEW LABORATORY is to be established at Cambridge with a gift of £100,000 by Mullard, Ltd. It will help in continuing work on radio-astronomy by the Cavendish laboratory. Professor N. F. Mott, FRS, Cavendish Professor of Experimental Physics, informs us that no architect has yet been appointed for the building work but that most of the construction will be of a large aerial system, and that the buildings will be confined to small and simple laboratories and huts.

PROFESSIONAL ANNOUNCEMENTS

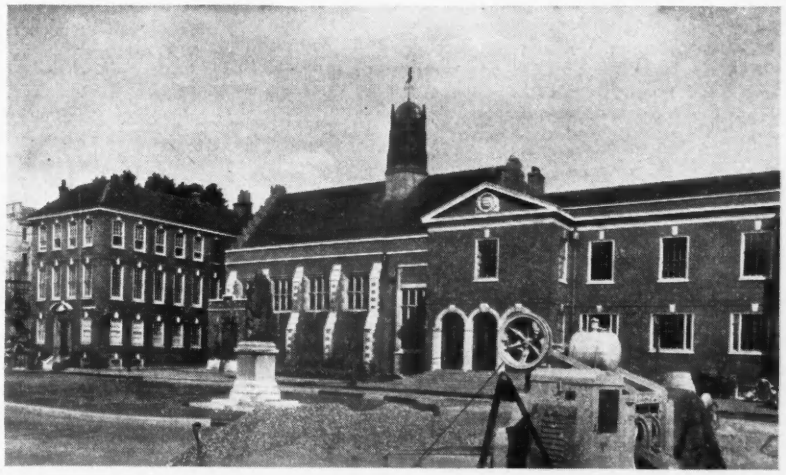
MR. FRANK ANDREWS, LRIBA, has transferred his Ringwood office from 45, High-street, to 58, Southampton-road. (Tel.: 588, remains the same.)

MESSRS. WHEELER, RUMBLE & PARTNERS, chartered quantity surveyors, of London and Brighton, announce that MR. R. W. HITCHCOCK, ARICS, a senior assistant with them since 1946, has now been taken into partnership.

FROM "THE BUILDER" OF 1855

Saturday, August 25, 1855

MAIDEN-LANE AND VALLEY OF THE FLEET—HOW WE IMPROVE.—Along the valley of the Fleet, from Coppice-row to Farringdon-street, the work of demolishing old and rotten dwellings is carried vigorously forward, and on the opposite side of the street, a little to the south of the Clerkenwell Sessions House, many dwellings of a date anterior to the Fire of London are now being removed. The west side of the street from here towards Cowcross-street, and then towards the Fleet, would seem to have been built long before the Sessions House. . . . It is curious to stand now at Coppice-row and see the fine view of St. Paul's Cathedral which is opened out by the removal of these buildings. . . . It was a dreadful place, filled to overflowing with the worst sorts of wretchedness and vice.



THE REBUILDING OF GRAYS INN.—Good progress is being made in the rebuilding of Grays Inn following war damage, and the work is expected to be completed in about two years' time. The architect for reconstruction is Sir Edward Maufe, RA, FRIBA. On the left of the photograph is the newly constructed Porter's Lodge, the Hall with its new roof is in the centre and on the right is the reconstructed library.

HOUSING IN FRANCE

By B. S. Townroe, OBE, HonARIBA

ON a recent visit to several centres in France, I had an opportunity to learn about their housing problems. M. Mendes-France (during the eight months he was Prime Minister) insisted on the importance of providing better homes for French people, and the public interest in better housing is at last beginning to develop. One of the main difficulties is that the average Frenchman and his wife have not realised how vital are decent homes, and spend much more on food than on rents. He is content to work only about two weeks in the year to pay his annual rent, whereas in other countries the householder spends on rent about one-sixth of his weekly income, that is over eight weeks of work annually.

In the spring I was asked to speak at the Sorbonne in Paris, in Orleans, Tours and Rouen, on "Housing Progress in Great Britain," and have told French audiences of Sir Winston Churchill's expectation that 1955 will be the greatest building year in our history, with nearly 300,000 new homes under construction at the beginning of the year. At the same time, I have emphasised that since the war at least six million people in Great Britain have been able to move into new homes, but that this has meant great sacrifices on the part of taxpayers and ratepayers—falling not only on the present generation, but on their children, grandchildren and probably on their great-grandchildren for the next 60 years.

BRITISH METHODS STUDIED

The French Government have been closely studying our methods, and have set up an organisation to provide funds for the improvement of existing houses, as well as for building new houses. Regulations have been issued earlier this year dividing up the types of old dwellings for which public national assistance can be given into three categories. The first category is of houses which need attention for the sake of public health, including repairs of WCs and cesspools apart from remedying structural defects, like external walls, staircases and damp walls. The second category is for dwellings which need repairs to windows and doors, the provision of a water supply and better ventilation. The third category includes dwellings which need repainting, installation of electricity and central heating in the case of flats.

Talking to many Frenchmen, I find more and more realisation that much more will have to be done to free builders from existing restrictions, and allow such rents to be charged for new buildings as will guarantee a minimum return on the capital invested. The Left Wing parties, which exercise great influence in the French National Assembly, naturally oppose this bitterly, and to the members of a succession of unstable governments (22 in all since the Liberation of France with an average life of under six months) the granting of more freedom for the building industry, if it means higher rents, is bound to be unpopular.

In my opinion, after studying housing in France over a period of 30 years, the situation is deteriorating instead of improving. Hard facts will in course of time have to be faced, even if they are politically unpleasant, and here are a few of the basic truths behind France's housing problem. In the last war 1,229,000 homes were partly or wholly destroyed, and 12 communities with more than 100,000 population had to be completely rebuilt. A tribute ought to be paid to the way reconstruction has been carried out. Mr. Rolf Jensen, FRIBA, Architect to Paddington Borough Council, recently toured in France and Switzerland, and has told me of the excellent building of flats, notably at Pantin, near Paris, at Villeneuve St. Georges, alongside the harbour at Boulogne, and at Le Havre and Rouen. Mr. Jensen believes that we in this country can learn from the best up-to-date work of the French, particularly in the construction of flats.

Nevertheless, two great wars, enemy occupations, frozen rents and inflation, have made the French housing problem more and more difficult to solve. At the end of the war I was told at the Ministry of Reconstruction that the average age of buildings in France was 57 years. It was then said that 20 per cent. of these were over 100 years old. To-day in the rural areas millions of French people are living in homes without electricity, running water, gas or sewerage. In Paris it has been stated that 84 per cent. of dwellings are without baths, and 46 per cent. without WCs. The Prefect of the Police in Paris has announced that it is necessary to evict every month families living in about 3,000 housing units, mainly flats, "owing to the immediate danger of these literally collapsing."

M. Claudius Petit, the Minister of Reconstruction, in a public speech, confirmed the immensity of the problems in these words: "We have reached the point where our houses are falling apart faster than they are being constructed. I want to wrest this country from the leprosy of slums. A country that spends more for its tobacco and drinks than it does for its housing is a dying country."

PUBLIC'S INDIFFERENCE

The public remain strangely indifferent. A number of polls have been taken which show that one out of every four Frenchmen consider the current rents are too high. No doubt as compared with 50 years ago this is true, for since 1914 building costs have increased from 60 to 80 times. (These figures are in terms of the franc.) Legislation has also been passed for a revaluation of rents over a period of five years, but so far there is little evidence that rents and the cost of building are anywhere near being balanced.

Apart from finance there is the need of more builders, and it is estimated that the building industry needs to double its labour army. In 1950 it was hoped through the National Office of Immigration to enrol large numbers of workers from foreign countries. For a time about 123,000 ex-German prisoners of war remained in France, but within three years the majority had returned to Germany. Efforts were made to bring in Italians, but here again, many returned to Italy because of the bad housing. Large numbers of North Africans, especially Algerians, are employed, but as so many are both uneducated and unskilled they do not quickly learn the work.

The leaders of public opinion, men like M. Mendes-France and others, recognise the need of a public demand for better housing, and in the opinion of many observers, much more encouragement should now be given to private builders.

CRICKET

RIBA Lose to RICS

THE RIBA Cricket Club met with defeat in their annual game against the RICS XI, played on the College of Estate Management ground at Hinchley Wood on August 17. On the day, the Surveyors were the better side and, in spite of a fluent innings by Kennedy Hawkes and useful scores by Bishop and Francis, RIBA were out for 132. Gray, for the RICS, made the most of a wicket which was on the green side early in the day, and his 5 wickets for 34 represented a good piece of bowling. The Surveyors' fielding was first-class throughout, Goater at coverpoint being outstanding.

When the RICS batted, the wicket had lost any life it may have possessed, and neither Case nor Mudie could get anything out of it. Indeed, the first two wickets fell rather fortuitously, one through a good throw-in by Case and the other when Francis induced Bullard, who had batted like the Rock of Gibraltar, to hit his wicket. This brought together Fletcher and Goater who hit off the next 70 runs without difficulty. Goater, who in build and style is not unworthy of being compared with C. G. Macartney, gave a sparkling display of batting, which even the Architects enjoyed, at least those of them who were not engaged in retrieving the ball from the boundary. Scores:

RIBA CC

J. G. Batty lbw b Gray	5
J. Kennedy Hawkes b Gray	57
B. S. Smyth b Gray	12
L. G. W. Bishop c Rogers b Chessher	29
R. Mudie lbw b Gray	0
I. M. Leslie b Mash	0
R. Case c and b Gray	1
H. E. S. Francis b Thurlow	21
G. C. Linfield c Porter b Geddes	9
D. Carroll st Fletcher b Geddes	0
W. W. Atkinson not out	1
Extras	6
Total	132

RICS CC

W. J. Bullard hit wkt b Francis	41
D. A. Thurlow run out	11
M. Fletcher not out	41
A. Goater not out	32
Extras	9
Total (for 2 wkts)	134

M. C. Geddes, R. W. Chessher, R. Mash, G. G. Rogers, J. A. Porter, L. F. Walters and D. G. Gray did not bat.

Bowling

RICS					RIBA				
Gray	17	4	34	5	Case	4	1	23	—
Mash	12	3	37	1	Mudie	9.4	2	35	—
Thurlow	3	—	15	1	Batty	8	1	33	—
Geddes	4	1	15	2	Smyth	2	—	18	—
Chessher	1	—	1	1	Francis	3	—	16	1

NEW APPOINTMENT

Mr. John S. Bates has been appointed Borough Surveyor of Loughborough, in succession to Mr. Wilfred Granger, who is retiring after 40 years' service with the Corporation.

DEVELOPMENT AND PLANNING IN WEST AFRICA

A Talk at the TPI Summer School

THE principles used in planning new towns in the Gold Coast to-day, were discussed by MR. A. E. S. ALCOCK, BSc, MTPI, MICE, in a paper read at the Town and Country Planning Summer School at Cambridge, on August 23.

Before turning to this particular aspect of development, Mr. Alcock said that the building industry in recent years had been very active in West Africa. The Government had in hand vast educational programmes, and many new hospitals and clinics had been built throughout the country. Housing schemes had occupied the industry for many years and the present trend was towards the encouragement of housing by self-help through loans and technical advice.

Dealing with the planning of new towns in the Gold Coast, the speaker said :—

The nineteenth century produced in Europe and America what Lewis Mumford called the " Non-Plan of the Non-City." He described this plan as a layout of a town that has no relation to social activities and needs other than those of the surveyor, the real estate speculator, and the jerry builder. Although many people believe that local conditions are virtually passing through a " Nineteenth century " phase it was decided in planning the new seaport town of Tema that surveying would be made subservient to social needs and that steps would be taken to keep out the real estate speculator and the jerry builder.

As a first step an area of land, 63 square miles in extent, stretching some 10 miles along the coast and six miles inland, containing scattered herdsmens' hamlets and one fishing village of 4,000 people, was acquired at existing use value by special legislation. Thus the powers of ground-landlordship were added to the administrative powers which the Government already has through general legislation affecting the development of land for urban uses. By this step also the real estate speculator was excluded from the outset, and the enhancement of land values due to the development of the town and harbour secured for public use in the improvement of the town.

NEW TOWN CORPORATION

As a second step a new town corporation was established, again by special legislation, which has the dual function of a new town developer and a local authority, thus ensuring that the jerry builder has no place in Tema. Provision is made for the setting up of a normal local authority by stages, as the new town grows, and for the gradual transfer of relevant functions from the corporation to it.

The third step was to consider the social needs of the new town population before those of the surveyor. To plan for social needs it was necessary to form some idea of the make-up of the future population. As 80 per cent. of the population of the Gold Coast lives in villages of less than 3,000 inhabitants and as labour for the mining and other industries comes mainly from the north, where there are no large towns, it is confidently expected that the bulk of the new town population will be migrants from the rural areas.

The effect of urban life on people from the countryside can be observed in many existing towns. These towns grew up around villages of self-employed farmers and fishermen. Many of the original villages are still in existence. The homogeneous communities in them have expanded. Their members often pursue the same occupations as their forebears. The urban development which has grown up around the old villages is occupied by heterogeneous communities, the majority of whose members are either migrants from the rural areas or their recent descendants. Among the homogeneous communities family and kinship relations are strong. People continue to live in " extended families " following the old customs. Among the heterogeneous communities family and kinship relations are weak. People live singly or in " biological families." The crude form of social security offered by the extended family, in which no one is homeless and no one starves although many are poor, is no longer there. Mutual aid societies have therefore appeared especially among traders, labour organisations and tribes and voluntary inter-tribal and inter-racial groups have grown up in these communities.

RESIDENTIAL AREAS

A simple and, it is hoped, effective system of planning and development of residential areas has been used—one which, if strictly followed, would ensure that there would be no broad stratification across the town of wealthy, middle-income and poor residential zones as one travelled from the outskirts towards the industrial areas. A community unit for 12,000 people, about the size of a small town, has been chosen as the unit for development. This unit could support a fair-sized market, a community centre, branch library, health centre, middle or secondary school, post office and police station. The unit is planned around the market because the majority of women engage in trade.

Much of the middleman and retail trade is in the hands of women and goods pass through the hands of several middlewomen before reaching the consumer. The market stall and the roadside pitch are in greater use than the shop. To provide for the inevitable village ways of life the community unit is divided into four neighbourhood units, each for 3,000 people. In each of these units there will be a primary school and a neighbourhood centre. The latter will provide a meeting place for the smaller societies, which in the early years would be likely to contain many tribal associations.

Community units will be built one at a time as far as possible. In them provision for all income groups will be made. As each unit develops so lessons will be learned and the planning of the next one will be better. As ways of life change so the next unit will be planned to meet the changes. Seven units in all are expected to provide for the ultimate population of the town, which might not be reached for half a century, during which time many changes will take place. The principles used in planning Tema will be on trial in the next few years. On their success will depend their adoption in other new towns, particularly in the new town for the aluminium factory of the Volta River Project if that development goes ahead.

PLANNING PROCEDURE

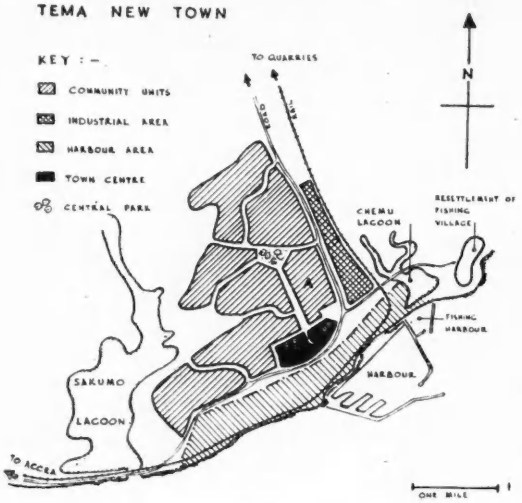
I will now describe town planning procedure and organisation in the Gold Coast. The evolution of planning began at the end of last century when the public works and railway engineers of the Government service prepared " layouts " for many towns and villages all over the country. These were all gridiron patterns, popular, because of their simplicity, in newly developing lands all over the world at that time. Development in accordance with the layouts was controlled by the Public Works Department, which regulates streets and buildings under the Towns Ordinance in certain areas. In 1925 a town planning ordinance was enacted, giving powers to statutory commissions to redevelop towns. The provisions of this ordinance were not applied. In 1945 a town and country planning ordinance was enacted, which embodied many of the principles of the Town and Country Planning Act, 1932, of the United Kingdom.

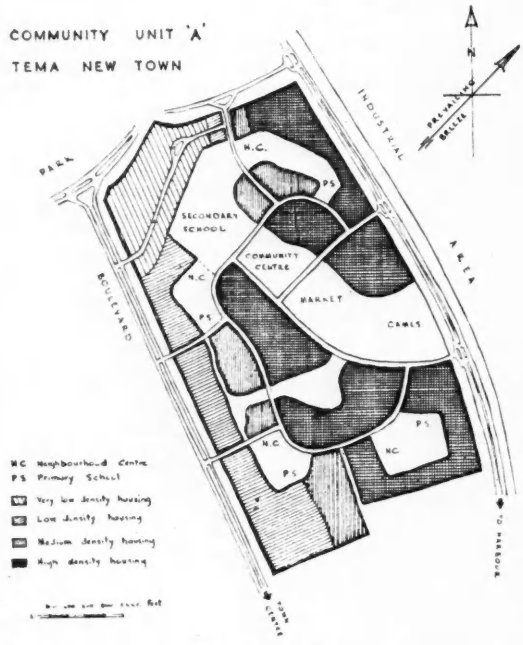
The Town and Country Planning Ordinance, 1945, established a board as the authority for town and country planning, with power to appoint a planning committee for each planning area. Public officials were made *ex-officio* members of the board and the committees. Development is controlled by the grant of planning permission in the interim period between the declaration of planning areas and the approval of schemes and by the schemes thereafter. In practice the latter have been found too complex for satisfactory administration by local authorities and too rigid to meet the need for change. The impact of an expanding economy on social as well as economic conditions has made the need for frequent change inevitable.

The lack of research, of basic data, of surveys of all kinds coupled with shortages of staff made it impossible fully to understand the nature of these changes, and so to make schemes which would remain satisfactory for any length of time. Therefore only those schemes which were required by statutory provision came to be prepared and approved, while development in the rest of the areas remains subject to planning permission, which is granted with regard to draft development plans. These plans are revised as the need arises after careful consideration by the Town and Country Planning Board.

CONSTITUTIONAL CHANGES

Changes in the constitution of the central government by the establishment





of a Ministerial system led to a Minister being responsible for the subject of town and country planning, with powers to appoint the members of the town and country planning board, except the *ex-officio* civil servants. Changes in the constitution of local authorities to fully elected memberships of councillors led to the appointment of a majority of councillors on planning committees, which became virtually committees of the councils.

All these changes and adjustments pointed the need for revision of the law, not only to bring it into line with the changes in constitution but to provide for satisfactory development plan procedure, for better planning control, and for making the existing practice of granting and lending monies to local authorities for town planning projects a statutory procedure. Consideration is being given to the amendment of the law on town planning—but as the principles of amendment are still *sub judice* I cannot discuss them in detail here. Needless to say, they might be expected to embody as much as possible of the best in modern practice elsewhere with such adaptations to local conditions as experience in the last 10 years has shown to be desirable.

The organisation of planning work in the Gold Coast has taken account of the financial weakness of the local authorities compared with the Central Government. The Government employs planning officers who, with supporting research staff of sociologists and others, perform several functions. The planning officers are officers of the Ministry of Local Government, they are planning officers and secretaries of the planning committees, wherever there are planning areas, and they are the advisers of the rural local authorities in the planning of their small towns and villages. Advice in the Gold Coast means doing practically the whole job short of demarcation and building inspection, which are left to the local authorities.

Regional planning as such is as yet inchoate, but with the investigations which are going on for the Volta River Project, with which the planning staff of the Ministry is intimately concerned, there is greater understanding of the need for broader planning and for co-ordination of the activities of the various agencies concerned in development. The effects of rapid development on the communication system of the country are worthy of much study. I have already referred to the closing of roadstead ports and the decline of their towns. The effects of improved communications on the distribution of rural populations are widespread, and new centres of population are springing up at strategic points while old ones are declining when their importance has been taken away by realignments or new construction.

ADVICE TO RURAL AREAS

The local authorities in the rural areas, who have recently replaced the traditional native authorities, are often more progressive than their predecessors and with the greater wealth available to-day are able to lay out new areas for development and erect markets and other public buildings. There is a wide demand particularly from the forest zone for planning advice and for designs of buildings erected by public authorities.

As much help as possible is always given but demands exceed capacity and many local authorities engage inexperienced people to lay out their villages and design their public buildings. To ameliorate this situation as far as possible, designs for council offices, for markets and for other public buildings have been issued, while a book entitled "How to Plan Your Village" was written by Alcock and Richards in very simple language with as much pictorial matter as possible, to educate the local authority councillors and officials and their untrained "consultants" in the elements of planning of rural areas in the tropics.

To help dwellers to improve village building, research has been carried out in the field and laboratory, principally on the use of Portland cement as a stabiliser for building in soil. The people in the rural areas are expert at mud building and at choosing suitable soils for the purpose. Samples are tested in the laboratory and the appropriate amount of cement required to stabilise the soils satisfactorily and economically is found by the wet/dry durability test. This amount is normally about 6 per cent. by volume for the lateritic soils of the forest zone. Stabilised mud buildings are much more durable than those built in raw earth while being much cheaper than the ubiquitous sand and cement buildings of the urban areas.

BASIC PRINCIPLES

The basic principles in preparing and revising the draft development plans and in using them as a guide in granting planning permission are similar to those in use elsewhere. Attempts are made to limit development to optimum areas and to preserve green belts around the towns. The areas planned are in nearly all cases more than sufficient for the needs of the next 50 years although these areas do no more than embrace the land which had already come under scattered urban development at the time the first plans were prepared.

In the last 10 years there have been instances of planning committees actually reducing the planned areas of their towns, but generally there is pressure to increase them despite the fact that the planned areas are more than adequate for future purposes. Fortunately these pressures have not yet been strong enough to succeed, although in Kumasi, where the development of the town is hemmed in at the moment by various major uses, the use of land for dormitory housing in the surrounding villages is being demanded. This is controlled by permitting the development of relatively small areas in certain villages for residential use with the promise that further land may be so used when the small areas are fully developed. The principle of phasing of development is thus being introduced on a small scale. In many towns phasing is not feasible because insecurity of title to land would prevent the public from buying land freely and because the public authorities lack statutory powers which would enable them to acquire land for exchange or resale to the public. The provision of services such

as water and electricity follows development trends in the towns and cannot be phased for the reasons already stated.

Some flexibility in use planning has been found desirable. Broad zoning is applied as rigidly as possible although even here planning committees may seek permission from the Town and Country Planning Board to make changes from time to time. Within the broad use zones, other than open space, the planning committees are empowered to permit a variety of uses, such as minor commercial uses in residential areas and residential uses in commercial areas. These permissive variations provide experience on the basis of which, with later surveys, a more closely detailed use of land is gradually being laid down.

West African life is not amenable to a regimented urban framework and indeed there is no valid reason why it should be subjected to such an ordeal. A form of urban planning which is suited to West African life will evolve if a rational degree of flexibility is used in planning for the social changes of the next few decades and if the value of planning control is demonstrated to the public through its wise administration by the elected representatives of the people. At the beginning of this address I said that the success of planning in the colonies depends on the people themselves. I believe that it is only by allowing them to exercise planning control, with the advice of the planner to guide them, that they will discover the true forms which are best suited to their ways of life.

Bertrand Russell warns us that regimentation and uniformity are dangers that an organised industrial world will have to fear and against which it should take deliberate measures. West Africa is not yet industrialised. It has opportunities for learning from the mistakes of others and thereby avoiding many of those regimentations and uniformities which depress the lives of so many thousands of people and disfigure so many square miles of land in the industrialised countries of the world.

The Gold Coast is passing through a phase of rapid development in which town and country planning is playing an important part. There are many problems and many adjustments have to be made to meet the needs of the times. The social and economic changes which are taking place need constant study if planners are to look into the future with knowledge, and if they are to assist in the evolution of effective planning methods, which will anticipate and provide for those changes at all times.

HIGHER EDUCATION AWARD

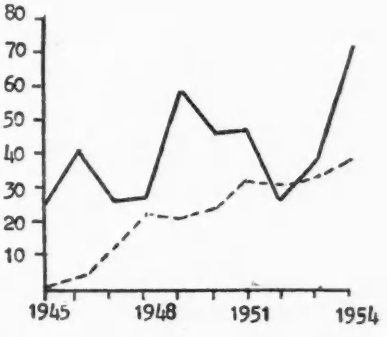
A scholarship valued at £375 has been awarded by the Southern Counties Scholarship and Welfare Fund for Higher Education in Building to T. C. Dolding, a schoolboy from Taunton School, Somerset. The award is to enable the candidate to take a three-year full-time course for the Higher National Diploma in Building. The scholarships are awarded annually, and details may be obtained from the Southern Counties Federation of Building Trades Employers at Sterling Buildings, Carfax, Horsham.

INDUSTRIAL BUILDING, 1944-54

Board of Trade Review

SINCE the war, more than 10,000 schemes for new industrial buildings with an aggregate floor space of more than 225m. sq. ft. have been completed in Great Britain, according to an article on this subject in the *Board of Trade Journal* of August 20. The article goes on to analyse the sources of the statistics given, and suggests some cautions to be observed in using them.

The total area of new industrial building, the article continues, which has been granted location approval in Great Britain has fluctuated greatly during the past ten years, largely reflecting changes in Government investment policy. From mid-1945, a quarterly rate of approvals of rather more than 8 million sq. ft. continued until, in the autumn of 1947, capital cuts were imposed. This led to a big fall in the area of new approvals up to mid-1948.



The graph shows the area of buildings in Great Britain, in million square feet. The solid line indicates "approvals" and the broken line "completions."

Relaxations in building licensing followed, and approvals rose rapidly towards the end of the year, reaching a record figure of more than 20 million sq. ft. in the first quarter of 1949. Licensing restrictions were again tightened up early in 1950 and intensified in mid-1951 when the impact of the defence programme was being felt. The quarterly rate of approvals remained at 10-12 million sq. ft. throughout 1949, 1950 and 1951. A ban on the start of further industrial building was made in November, 1951, and this, together with the recession in textiles and certain consumer goods industries, produced an exceptionally low level of approvals in 1952.

After mid-1952, building licensing was progressively relaxed, and it was abolished in November, 1954. Since 1952, there has been an almost continuous increase in the total area approved each quarter. More than 21 million sq. ft. were approved in the third quarter of 1954, nearly 24 million in the first quarter of 1955 and more than 29 million in the second.

The national trend is reflected in the figures of most of the standard regions. The record annual level of approvals was reached in 1954 and was geographically widespread. The large expansion in approvals in the Eastern Region in recent years is due in part to the fact that the figures for this region include development at the New Towns at Basildon, Harlow, Hatfield, Hemel Hempstead, Stevenage and Welwyn.

16,414 schemes were approved from 1945 to 1954 inclusive. Nearly 40 per cent. of these were between five and ten thousand sq. ft., which accounted for about one-tenth of the total area approved. Less than 3½ per cent. were schemes larger than 100,000 sq. ft., but these accounted for one-third of the total area approved.

According to the information at present available, some 77 per cent. of the area approved from 1945 to 1953 inclusive, has proceeded to the building stage. For approvals in the 1945-47 period the figure is almost 90 per cent., and for 1948-53 72 per cent.

Prominent amongst the industries for which new industrial building has been approved since the war are chemicals, the engineering and vehicle group of industries, and food and drink industries. In 1954 expansion schemes for motor-vehicle manufacture were particularly large.

Rather more than one-quarter of all industrial building granted location approval since the war, and about one-third of that known to have been completed by the end of 1954 has been in the Development Areas.

OBITUARY

E. T. Leeds, FSA, Hon.ARIBA

WE announce with regret the death, which took place at Oxford on August 17, of Mr. Edward Thurlow Leeds, BA (Cantab.), MA (Oxon.), FSA, Hon.ARIBA. He was 78.

Mr. Leeds was educated at Uppingham School and at Magdalene College, Cambridge. Among the posts he held and the honours he received were: Cadet, Federated Malay Civil Service, 1900; Assistant-Keeper, Dept. of Antiquities, Ashmolean Museum, 1908; Keeper of the Ashmolean Museum, 1928-45; Vice-President, Society of Antiquaries, 1929-32; Rhind Lecturer, 1935; Fellow of Brasenose College, 1938-45; Hon. Fellow, 1946; Gold Medallist, Society of Antiquaries, 1946. He became Hon.ARIBA in 1932.

His publications included "The Archæology of the Anglo-Saxon Settlements," "Celtic Ornament in the British Isles," "Early Anglo-Saxon Art and Archæology."

Thomas Lawrie, CBE, MA

MR. THOMAS LAWRIE, general manager of the North of Scotland Hydro-Electric Board, died suddenly in Edinburgh on August 13. Educated at Mackie Academy, Stonehaven, Leighton Park School, Reading, and at King's College, Cambridge, he was an MA of Cambridge, where he took the Mechanical Sciences Tripos in 1923, a member of the Institutes of Electrical Engineers and Mechanical Engineers, a Fellow of the Royal Society of Edinburgh, and was awarded the CBE in the 1953 Coronation Honours. He was for three years in the hydro-electric section of the English Electric Company and later became Secretary of the Power and Traction Finance Company, Ltd. On the formation of the North of Scotland Hydro-Electric Board he became its first secretary. In 1948 he became general manager.

SOCIOLOGY AND ARCHITECTURE

Professor Madge's Lecture at the RIBA

"SOCIOLOGY AND ARCHITECTURE" was the subject of a lecture given by PROFESSOR CHARLES MADGE, Faculty of Commerce and Social Science, University of Birmingham, at the RIBA on Tuesday, June 14. Mr. C. H. Aslin, CBE, president, RIBA, was in the chair. The following are extracts from Prof. Madge's lecture :

The word "sociology" was first coined something more than a hundred years ago by Auguste Comte. His conception of society is summed up in a sentence from Pascal which he quoted as a motto: "The whole succession of men, during the long series of ages, should be considered as One Man, who continues to live and who continually learns." This is reminiscent of a phrase in a book by Marx about "the activity of a whole series of generations, each one standing on the shoulders of those preceding it." Within the vivid image of social continuity there lurks another, that of society as a building. In the sociological writing of our own time, the images of structure, framework and pattern are constantly being invoked. One might almost say that sociologists are trying to discover the architecture of society.

Society is, of course, an odd sort of building in that it is constantly being rebuilt. It is always possible that it stands on the site of other buildings which have disappeared. It certainly incorporates old materials put to new uses, and its construction represents a continuous compromise between past and present needs. It is, however, to my mind essential to consider it as a unity both in space and time: as the combined and cumulative performance of the human species during its history. To quote Aristotle, whom I would call the real originator of sociology as of so much else: "Just as in discussing a house, it is the whole figure and form of the house which concerns us, not merely the bricks and mortar and timber; so in natural science [he could have said, also in social science], it is the composite thing, the thing as a whole, which primarily concerns us, not the materials of it, which are not found apart from the thing itself whose materials they are."

I must not get too caught up with Aristotle, but I cannot resist recalling to you the story which he tells at this point in order to emphasise that nothing is too mean or lowly for science to investigate: "how some visitors once wished to meet Heracleitus," the early Greek philosopher, "and when they came to call and saw him in the kitchen, warming himself at the stove, they hesitated; but Heracleitus said, 'Come in; don't be afraid; there are gods even here.'"

"GODS IN KITCHENS"

Both sociologists and architects must be prepared to find gods in kitchens, and indeed a kitchen would make a good mutual rendezvous. A sociologist, or an architect, who considers such an area as unworthy, is, I would suggest, not to be trusted with the larger and grander tasks. I feel that many architects will understand what I mean when I say that what we most need nowadays are people who have genuinely large views and also a genuine feeling for detail, which means first-hand experience in as many different contexts as possible.

The important thing here is an adequate time-scale. Reverting to the metaphor of society as a building composed of generations standing on one another's shoulders, this means that the industrial turret in which we stand is at most about one-thousandth part of the whole, measured on a time-scale. At the same time, we must also remember the extraordinary increase in the total population of the world during these past 250 years, and also that it is only during that time that all the areas and peoples of the world have become an inter-dependent whole. It is this last one-thousandth part of human history which dominates us; and its dominant feature is industry.

THE "REALISTIC" APPROACH

Our great industrial achievement is based on economics and engineering. These involve what is sometimes called a "realistic" approach to the environment and its problems. A realistic approach is, as a rule, a simplified approach. Economics in practice considers certain kinds of good as more real than others. Engineering in practice considers certain kinds of function as more real than others. To sociologists and architects, reality is considerably more comprehensive, though we do well to recognise the potency of economic forces and of their ally, the engineer. Indeed, architecture and sociology have to try to be "realistic" in order to make their way in the present century. As a result they have, I think, managed to maintain their point of view that social man includes but extends beyond economic man and that building includes but extends beyond engineering.

I want to contrast what I consider a right view and a wrong view about the changing standards and values of human history. In architectural history, tastes have changed so that, for instance, at a certain stage of development gothic architecture was no longer esteemed and its place was taken by classical and baroque. When the old St. Paul's Cathedral was destroyed, a splendid but quite different kind of building took its place. But no one, I think, wants deliberately to pull down Westminster Abbey and replace that by a building in the style of the Festival Hall. That must be because the aesthetic and moral conceptions of the builders of Westminster Abbey have significance for us alongside of those of the architects of St. Paul's and the Festival Hall. In the same way we inherit from the Middle Ages the feudal values of nobility, gentleness and honour. We do not want to construct any more feudal systems, but some of the values that arose from them have an endurance beyond the power-structures of the past.

I say, *some* of the values. We can no more accept the past as a whole than we can reject it as a whole. We are constantly struggling to escape from the past, and I am of one mind with those who view with horror the insidious infiltration of false imitations of the past into the present. In sociology this can be defined as snobbery; in architecture it is the fake antique. We cannot avoid the process of growing up. We have to accept those two great social and technical inventions, the town and the factory, which together have so rapidly changed the world and made it what it now is.

What, then, are the right view and the wrong view about our changing values? The wrong view, I am suggesting, can take the form either of iconoclasm or of snobbery : essentially it consists in a failure to distinguish the values themselves from the conditions which generated them. The only conditions that are relevant to us are our own conditions. But many values which arose under quite other conditions have an independent and autonomous meaning for us. So in order to have a right view about the past we have a double task. First, we have to understand and appreciate our own conditions. And second, we have to recognise and perhaps reinterpret those parts of our heritage from the past which have a persisting value.

The conditions under which we live, economic, technological, political, are changing fast and the change has every appearance of being uni-directional and irreversible. In a sense, technology, or the power of man over physical nature, is at the root of all this. In Marxist terms, the forces of production produce the social relations of production and these in turn produce beliefs and ideologies. But changes in social relations are slower than changes in technology, and changes in belief are slower still. These are like a series of cogwheels each larger, and therefore revolving more slowly, than the last. I believe myself that there is a sense in which social and political change depends on technical and economic change and that changes in ideas, especially in moral and social attitudes, depend in their turn on the social and political trend. To this extent I am a Marxist but like most sociologists I also accept the view of Max Weber that most important systems of ideas have their own autonomous development. The degree of autonomy may vary. In the case of aesthetic styles and in all questions of taste, I believe the degree of autonomy to be very high.

If the arts did not have an autonomous value, how is it that we can be moved by productions as far removed in time as those of the Stone Age, as far removed in space as those of China and Japan? The impression is instantaneous, even though it may take us time and patience to learn the language fully.

SOVIET RUSSIA

The revolution in Soviet Russia involved a rejection of the economic relations then obtaining, and of the political institutions that went with them. It also implied a rejection of bourgeois and feudal ideas. Yet many of the virtues that are encouraged in Russia are, in a sense, bourgeois virtues or even feudal

virtues. Ancient buildings are preserved, and paintings treasured. The conventions and traditions of music and ballet are respected and cherished. They have seemed more capable of appreciating the aesthetic and cultural languages of the past than of creating a new language suitable to their own conditions and of enduring significance. This is due, I think, not to iconoclasm but to that partial blindness which comes from too much economics and engineering. Neither sociology in a liberal sense nor architecture—which I regard as the essential complements to economics and engineering—can be said to be flourishing in Russia at the moment. It is the industrial revolution, rather than the Bolshevik revolution, which is to blame. One has to remember that the Russians have crammed their industrial revolution into one-tenth the time we took over ours. However humanistic its impulse, it has embodied itself architecturally in forms that are grandiose and empty in a way that can be paralleled in America and in Britain, too. In Britain and America, however, creative architecture has survived and one need not suppose that it has gone for ever in Russia.

But there are some immense problems here, enough to daunt the most determined optimist. These largely centre, I would like to submit, on a new and peculiar relation between the rate of socio-technical change and the life of buildings. The development of industry and the growth of population compel the expansion of cities and communications. But industry is restless, for ever changing its location, its processes, its products. The claims of industry are insistent, they trample down other claims, even the claims of humanity and piety. It is only later, when economic imperatives have receded, that we take in the extent of the damage. It is only now that we appreciate the problem bequeathed to us by the crude multiplication of factories, and of the people to work in them, and of the houses for the people to live in. To take housing alone, it is a need we have never caught up with, a need therefore so compelling that we are still meeting it in ways which we know by experience to be wrong—like the great post-war housing estates round London, for example—ways which are only aggravating the problems we already have on our hands.

BEAUTY AND FUNCTION

Ever since the industrial revolution set a new tempo for urban growth and social change, we have been working under heavy pressure, trying to combine the development of new technical possibilities with the rectification of past mistakes. Our record is a patchwork of success and failure, but looking at the contemporary urban landscape as a whole, who can doubt that failure is more conspicuous than success ?

The architect, after a century of uncertainty, seems to have developed a language which is both beautiful and functional. His best buildings do much to redeem the mediocrity of the urban environment as a whole. Nor can one doubt that this language will be intelligible to future generations, even if these generations themselves are building in quite a different way. But there is still a problem about the life of buildings, and of all kinds of construction, including railways and roadways and airfields and all those miles of service pipes and wires which, once laid down, are so expensive to re-route that they have to be accepted as virtually inflexible elements in planning.

In a crowded country like Britain there is all too little room for manœuvre. Yet technical inventions in the near future may make to-day's construction as obsolete as yesterday's. Can we devise an architecture and a method of town planning which is better adjusted to an era of rapid change? Can we contrive structures which will be temporary without being shoddy ? Can we reconcile the idea of structural transience with lasting aesthetic significance ? These are some of the questions to be explored, and there are, of course, some architects already exploring them. But the idea of permanence in building is itself strongly established, and is likely to outlast its own functional justification.

In the interests of clarity and logic we must distinguish the function of sociology, which is primarily the *study* of society, and the function of architecture, which is primarily the *design, construction* and *maintenance* of buildings. The discipline which for architects would be exactly parallel in function with sociology would consist in a combination of building research, archæology, art history and architectural criticism; in other words, the assessment of buildings, past, present and future, in all their aspects.

I see the task of sociology as one of social observation and criticism, of bringing unknown or neglected social facts to light and of clarifying influential social concepts. For example, I am sure it is the province of the sociologist to check up on such things as national housing policy, and the dispersion of industry and population. Here again his interest overlaps with that of the architect.

Of the two, the architect has the more complete and, to my mind, the more satisfying rôle, in that he not only studies a given situation but is active in devising means to meet it.

ACCIDENT PREVENTION

Address by HM Chief Inspector of Factories

AN address dealing with the causes of accidents in the building industry was given by SIR GEORGE BARNETT, HM Chief Inspector of Factories, at the third annual general meeting of the London Building and Engineering Contractors Accident Prevention Group, held at the Safety, Health and Welfare Centre, Horseferry-road, SW1, recently. Mr. W. Dawes was in the chair. The following is an extract from Sir George Barnett's address.

Recently I have been looking a little more closely at some of the causes of accidents in the building industry as reported to HM Inspectors, particularly from the point of view of the appropriateness of the requirements of the regulations for dealing with the circumstances under which accidents occur. By far the most frequent type of accident on building work is that due to falls, more than 75 per cent. of the fatal accidents and over 40 per cent. of all accidents falling within that category. Sample analyses of accidents due to falls of persons show that 43 per cent. of these falls (for fatalities the percentage is 78) involved breaches of the Building Regulations, and that all of these would either have been prevented, or the consequences of the accidents have been minimised, if the regulations had been complied with.

I have always regarded effective safety supervision at the working site as being every bit as essential for the purpose of accident prevention as a code of regulations which lays down specific safety standards. This special scrutiny appears to confirm this view. Of all the accidents under review, 42 per cent. occurred on sites where no-one had been appointed to pay special attention to safety, 30 per cent. occurred on sites where safety supervision was in the hands of someone who had other duties to perform, 25 per cent. occurred on sites which a Safety Officer visited occasionally, whereas only 1.25 per cent. occurred on sites where a Safety Officer was employed continuously. Of the accidents which would either have been prevented, or their seriousness minimised, by observance of the regulations, 51 per cent. occurred on sites where no-one was specially appointed to look after safety, 24 per cent. occurred on sites where an employee with other work to do gave part-time attention to safety, while 25 per cent. occurred on sites which a Safety Officer visited only occasionally. None of this type of accident occurred on a site where a full-time Safety Officer was employed. I particularly wish to draw attention to this extremely low, almost negligible, percentage of accidents on sites where full-time Safety Officers are employed.

IMPORTANT FINDING

Another important fact which this special survey has disclosed is that in only 14 per cent. of the cases could it be said that the accident was due to an unsafe act on the part of the injured person or one of his fellow workmen. It is often suggested that a high proportion of accidents is due to what might be described as personal folly. Well, so far as concerns accidents on building work due to falls, that does not appear to be the case. On the contrary, a substantial proportion of these accidents would be prevented if the simple precautions specified in the regulations were observed.

These figures relate only to accidents due to falls, both of persons and of materials, and I am constrained to wonder

what is the position in the organisations which the members of this accident prevention group represent. I have no doubt—I should not expect it to be otherwise—that the number of accidents you individually investigate which disclose a breach of regulations is small, but what about the accidents which comprise the bulk of those included in the annual returns, and which would not be prevented by compliance with the regulations? From the figures which I have quoted, rather more than 50 per cent. did not appear to involve any breach of the requirements and if to these are added the accidents due to stepping on or striking against objects, and due to carrying, wheeling, moving or lifting by hand, you have a very fruitful field for inquiry as to their incidence in your own organisations. While many, if not most, of such accidents are of a kind for which legislative measures cannot be specified, they certainly provide plenty of scope for good supervision, site housekeeping, training in safe methods of working, and, above all, setting a good example by letting it be seen that accident prevention is more than a byword. I should like to see some statistical data of the results achieved by the members of this accident prevention group which could serve as an incentive to other members of your industry to follow the example which you set in practice.

Important as it is for a Safety Officer to see that the requirements of the regulations are complied with and that all other practicable steps are taken to prevent accidents, there is another aspect of what, in my opinion, should also be his work, but to which, in many instances, little regard appears to be paid. I refer to the manner in which the various operations are carried out, and the need for consideration being given, when planning a job, to avoidance of unnecessary risks. You will be aware that, in many instances, the taking of precautions under the regulations is conditioned to practicability, that is to say, whatever the method of working, the obligation in such cases is to take such precautions as are practicable. It is, however, obvious in some cases following an accident that if due consideration had been given to safety when planning a particular operation, the risks occasioning the accident, and against which it was not practicable to take precautions, could have been obviated by adopting some other method of working. The remedy is, of course, for the Safety Officer to consider, along with those responsible for the execution of the work, the planning of each operation, and thereby ensure the method is consistent with safe practice and will permit of safeguards being used.

Finally, I should like to congratulate the Group on the help they are giving in the training of young apprentices in the building trade in safety methods. This is an innovation which I should like to see widely copied, for it is clear that if the young men entering an industry are made aware of the value of accident prevention and the interest and emphasis placed upon it by those for whom they work, it is a lesson they will not readily forget.

WAGE REGRADINGS

To Take Effect in October

THE National Joint Council for the Building Industry have announced the following list of district upgradings authorised by the Council to take effect from October 3 next:

MIDLANDS REGION

Raunds U.D.	A1 to A
Sleaford U.D....	A2 „ A1
Spalding U.D.	A2 „ A1
Uttoxeter U.D.	A2 „ A1

YORKSHIRE REGION

Whitby R.D. (part)	A2 to A1
Aysgarth R.D.	A3 „ A2
Driffield R.D. (other than Kirkburn, including Driffield Aerodrome) ...	A3 „ A2
Easingwold R.D. (part excluding Easingwold, Linton-on-Ouse) ...	A3 „ A2
Helmsley R.D.	A3 „ A2
Holderness R.D. (part—Aldbrough, Atwick, Bewholme, Brandesburton, Burton Constable, Burton Pidsea, Catwick, Easington, East Carton, Elstrongwick, Halsham, Hatfield, Hollym, Holmpton, Humbleton, Mappleton, Ottringham, Patrington, Rimswell, Rise, Roose, Seaton, Sigglesthorne, Skeffling, Sunk Island ,Welwick, Withernwick) ...	A3 „ A2
Kirby Moorside R.D.	}
Leyburn R.D....	}
Malton R.D.	}
Masham R.D.	}
Nidderdale R.D. (part)	}
Norton R.D.	}
Pickering R.D.	}
Pickering U.D.	}
Ripon M.B.	}
Ripon and Pateley Bridge R.D. ...	}
Sedbergh R.D. (part Dent, Garsdale)	}
Skipton R.D. (part Buckden, Kettlewell and Starbottom	}
Tadcaster R.D. (part Barkston, Bolton Percy, Catterton, Grimston, Healaugh, Huddlestone - with - Newthorpe, Kirby Wharfe, Lead, Ledsham, Ledston, Lotherton - cum - Aberford Micklefield, Oxton, Ryther - cum - Ossendyke, Saxton - cum - Scarthingwell, South Milford, Steeton, Sutton - with - Hazlewood, Towton, Ulleskelf)	} A3 „ A2
Tholthorpe	}
Wath R.D.	}
Wetherby R.D. (part — Angram, Bilton, Hutton Wandesley, Kirk Deighton, Little Ribston, Long Marston, North Deighton, Spofforth - with - Stockeld, Thornville, Tockwith, Wighill, Wilstrop)	}

NORTHERN COUNTIES REGION

MID AND NORTH NORTHUMBERLAND

Norham and Islandshire R.D. ...	A1 to A
Glendale R.D.	A1 „ A
Belford R.D.	A1 „ A
Alnwick R.D.	A1 „ A
Alnwick U.D....	A1 „ A
Amble U.D.	A1 „ A
Rothbury R.D.	A1 „ A
Morpeth R.D. (except part Graded A)	A1 „ A

TYNE AND HEXHAM

Bellingham R.D.	A1 to A
Haltwhistle R.D.	A1 „ A
Hexham R.D. (except part Graded A)	A1 „ A
Castle Ward R.D. (except part Graded A)	A1 „ A

NORTH-WEST DURHAM

The Civil Parish of Muggleswick in Lanchester R.D.	A3 to A2
The Civil Parishes of Hunstanworth, Edmondbyers (Weardale R.D.) ...	A3 „ A2
The Civil Parishes of High Fotherley, Whittonstall, Hedley, Newlands, Espershields, Shotley Low Quarter (Hexham R.D.)	A1 „ A

MIDDLESBROUGH

The Civil Parishes of Borrowby, Roxby, Newton Mulgrave, Glaisdale, Danby, Commondale, Westerdale (Whitby R.D.)	A2 to A1
The Civil Parishes of Bilsdale, Midcable, Easby, Ingleby Greenhow, Kildale (Stokesley R.D.)	A2 „ A1

BISHOP AUCKLAND

Tow Law U.D.	A2 to A1
The Townships of Frosterley, Stanhope, Civil Parish of Wolsingham	A2 „ A1
Civil Parish of Stanhope	A3 „ A2
Barnard Castle R.D., comprising the Civil Parishes of Forest and Frith, Newbiggin, Middleton in Teesdale, Egglestone, Marwood	A3 „ A2
Gainford, Ingleton, Staindrop, Streatlam and Stainton, Winston and Woodland	A2 „ A1
Civil Parishes of Egglestone Abbey, Wycliffe - with - Thorpe, Ovington, Hutton Magna, Barforth, Rokeby (Startforth R.D.)... ...	A2 „ A1
Portions of Startforth R.D. not otherwise graded	A3 „ A2
Civil Parish of Startforth	A1 „ A

DARLINGTON

Reeth R.D.	A3 to A2

SOUTHERN COUNTIES REGION

CHATHAM DISTRICT

Chatham, Gillingham, Rochester	A1 to A
MAIDSTONE	A1 to A
SEVENOAKS	A1 to A

ALDERSHOT DISTRICT

Aldershot, Farnborough, Farnham, Fleet...	A2 to A1
BANBURY	A2 to A1

BOURNE END DISTRICT

Marlow	A1 to A
HIGH WYCOMBE	A1 to A

BEACONSFIELD DISTRICT

Chalfonts, Gerrard's Cross	A1 to A
MAIDENHEAD	A1 to A

COUNCIL HOUSES IN SCOTLAND

Average Rent of 10*s.* 4*d.*

THE average rent of a permanent council house in Scotland last November was slightly over 10s. per week or £26 16s. 0½d. per year. This represents an increase of about 3d. a week over the previous year's average.

For council houses built since the war the average rent last November was almost 11s. 9d. per week or £30 10s. 10d. per year, an increase of about ¼d. a week on the previous year and, compared with 1951, an increase weekly of some 4¼d.

Since 1951 the average rent of council houses built before the war had increased from about 8s. 4d. a week to 8s. 10d. a week.

These figures, which exclude rates and rebates, are contained in a White Paper, "Rents of Houses owned by Local Authorities in Scotland, 1954," published on August 17 (HMSO, price 2s.), by the DHS.

The White Paper shows considerable variations between the average rents charged. In the four cities the details are:—

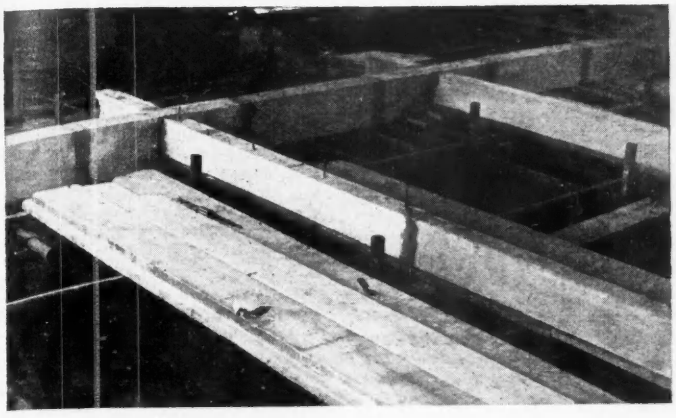
	Pre 1946 Houses	Post 1946 Houses	Combined Average
Edinburgh	£28 5 7	£40 18 3	£32 18 7
Glasgow	£21 14 9	£29 18 5	£24 16 7
Aberdeen	£23 17 10	£28 19 5	£26 1 11
Dundee	£18 10 7	£34 6 8	£24 10 5

Among the small burghs the average rent for post-war houses varied from £47 14s. 3d. in Cove and Kilcreggan down to £19 4s. 3d. in Lerwick.

The counties variation in rent of post-war houses was from £39 15s. in Wigtown to £19 7s. 7d. in Zetland.

In the whole of Scotland only 1,517 or .34 per cent of all the houses were receiving rebates from local authorities.

It is pointed out that council houses are not subject to the Rent Restriction Acts. The local authority fixes the rent and alone has the power to make changes.



Part of the roof frame.

Precast, Prestressed Roof, Old Bond-street

ADVANTAGES OF SMALL UNITS

A FLAT concrete roof with a central skylight has recently been constructed at the premises of Messrs. Truefitt and Hill, ladies' and gentlemen's hairdressers, of 23, Old Bond-street, London. The new roof replaces an old glass-and-timber studio roof.

The original proposal was for a reinforced concrete slab supported by steel joists. However, the difficulty of hoisting the joists up the face of the building and over a mansard roof made this scheme rather expensive. There were also obvious objections to the use of any quantity of *in situ* concrete.

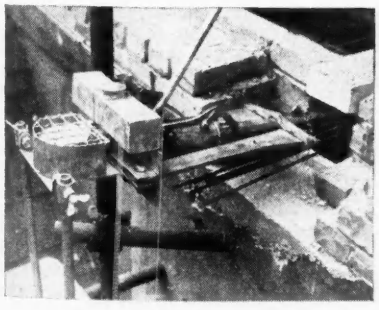
It was therefore decided to use small precast concrete units, which could be taken up to the top floor in the ordinary passenger lift, and then prestressed together.

The individual units, each of which was formed with a duct to take the prestressing cable, were all small and light enough to be lifted by hand. The heaviest was 3 ft. long, 10 in. deep and 5½ in. wide and weighed 165 lb. The longest section of concrete was 5 ft. 3½ in. long by 4 in. wide by 7 in. deep and this weighed 147 lb.

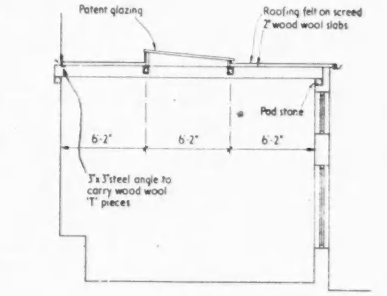
SPAN OF ROOF

The section of the roof to be spanned was 18 ft. by 25 ft. The two main beams span in the 18 ft. direction, and were placed at approximately 4 ft. 6 in. from each end of the roof. The two secondary beams span in the 25 ft. direction. As it was thought unwise to interfere in any way with the existing end walls, these secondary beams were cantilevered beyond the two main beams instead of resting on the end walls. Transverse holes were provided in the main beams at junctions with secondary beams to allow for the passage of the secondary beam cables.

The units were all assembled and then stressed together when in position, using the Gifford-Udall-CCL prestressing system. Scaffolding was erected beneath the position of the beam, the units placed upon it and rubber bushes introduced at the joints to link up the cable duct. Recesses were formed at the end of the ducts during casting to take these rubber bushes. The joints between the units could then be mortared up without the risk of mortar entering the duct.



The Gifford-Udall-CCL jack set up for stressing.



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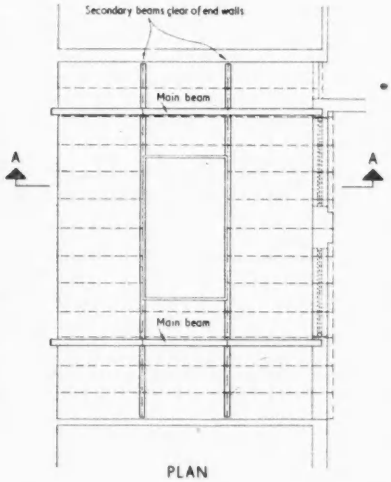


PLAN

After three days the cables were introduced and stressed. The main and secondary beams were stressed separately to avoid cracking at the junction of the two beams. The secondary beams were stressed first on to the main beams with four 0.276 in. diameter wires, and then the main beams were stressed with eight 0.276 in. diameter wires.

INSULATION VALUE

The beams carry 2 in. thick Marlith woodwool slabs. These slabs are supported on pressed steel T-sections which span the distance of 6 ft. between the secondary beams and the side walls. The insulation value of these slabs is sufficient without a false ceiling, and decoration is applied directly on to the underside of the slabs.

The price of the complete roof was 10s. 6d. per sq. ft., a saving of 25 per cent. on the original proposal for a reinforced concrete slab. This figure included 3-layer felt, but excluded all demolition and builders' work.

The architects for this roof were Messrs. Bates and Sinning, and the contractors Udalls Prestressed Concrete Company, Limited, for whom the consulting engineer was Mr. E. W. H. Gifford, BSc, AMICE.

LOANS TO LOCAL AUTHORITIES

Increase in Interest Rates

THE Ministry of Housing and Local Government have issued a circular (No. 43/55) to local authorities announcing higher rates of interest on loans to local authorities out of the local loans fund and higher consequential rates of interest on loans made by local authorities under the Small Dwellings Acquisition Acts, 1899-1923.

The new circular (which refers to Circular 38/55 dated July 13), states that the Treasury have now directed that the following rates of interest shall apply to all loans advanced to local authorities, as defined in Section 10 of the Local Authorities Loans Act, 1945, from the Local Loans Fund on and after August 13, 1955:—

Loans for not more than 5 years 4⅛ per cent.

Loans for more than 5 years 4½ per cent.

The circular also draws attention to the fact that, by virtue of Section 92 (2) of the Housing Act, 1935, the rate of interest on advances made by local authorities under the provisions of the Small Dwellings Acquisition Acts is fixed at a rate ¼ per cent. in excess of the rate of interest which, one month before the date on which the terms of the loan or advance are settled, was the rate fixed by the Treasury in respect of loans from the Local Loans Fund to local authorities for housing purposes.

*** This is the second increase in rates of interest under the Small Dwellings Acquisition Acts announced this month. By the terms of Circular 38/55 (issued on August 2) the rates of interest on advances for house purchase were raised to 4 per cent. and 4½ per cent. for periods under and over five years respectively—Ed.

GIFT TO BOYS' CLUBS

The National Association of Boys' Clubs has received £250 from the Dunlop Rubber Co. for a fund to develop clubs in new housing areas and elsewhere and to increase the Association's courses for adjusting boys to industry.

AIR CONDITIONING IN USA

Post-War Developments in the Commercial and Domestic Spheres

A PAPER on "Current American Practice in Heating, Ventilating and Air Conditioning" was given by MR. JOHN K. M. PRYKE, BSc(Eng), MIHVE, AMICE, MSME, MSHVE, consulting engineer, of New York, at a meeting of the Institution of Heating and Ventilating Engineers, held in London last year. We reproduce below Mr. Pryke's remarks on trends in heating in America, and also on the growth and design of air conditioning equipment. Mr. Pryke said:

During the past ten years there have been major changes and developments in American heating practice. They may be summarised as follows:

(1) *A steadily increasing use of hot-water heating systems, with corresponding discontinuance of conventional vacuum-steam systems.* Hot-water radiator and convector systems are to-day almost standard for hospitals, except where panel heating is used. The development and use of small one-pipe pumped hot-water circulating systems, using tongue-type "tees," has been notable.

(2) *The rapid growth of panel heating accompanied by considerable publicity and great interest in its development.* The initial examples were practically all bungalow-type houses, where the coils were cast into the concrete slab upon which the house was constructed. From this start, in the years 1945-47, panel heating has gradually begun to expand to the larger buildings, although even to-day there are not too many examples of large, completely panel-heated structures. Unfortunately, there is still a considerable multiplicity of design methods in use, and much work remains to be done on standardisation and simplification, and the American Society of Heating and Ventilating Engineers' programme on the whole panel-heating subject is still very far from completion. However, to-day panel heating is becoming more and more an accepted heating method. It is of amusing interest that the author still frequently answers queries concerning leaks, corrosion, expansion, etc., all of which were commonplace in England some twenty years ago.

(3) *A much greater degree of attention to the economics of design and increase in system efficiency.* Many systems installed fifteen to twenty years ago are found to be grossly over-boilered and over-radiatored. To-day, steadily increasing costs have greatly altered the picture.

(4) *A continued movement towards prefabrication of system components (motivated by economic forces).*

(5) *The increasing use of the heat pump.* Given certain conditions, the economics of heat pump or reversed refrigeration cycle installations are quite practical. Certain major manufacturers are already producing heat pumps in the form of packaged equipment for use in domestic residences, and quite a number of installations in certain areas of the country have already been made.

AIR CONDITIONING

Since World War II the growth of air conditioning has been enormously accelerated, most notably in the field of comfort cooling. Some idea of the present volume may be obtained from the estimated sales of air-conditioning equipment in 1953. This has been put at 1,500m. dollars and, incidentally, presents an interesting comparison with the corresponding figure for 1929, which was estimated at 10m. dollars. To a very great degree the growth is interrelated to the fact that the average American citizen has become air-conditioning-minded. Thus, to-day air-conditioned work areas have already become a standard necessity and this, in turn, has brought about a new field of development, which is the application of air conditioning to the private house.

So far as comfort cooling in larger commercial structures is concerned, the main post-war development in technical design has been the introduction of the high-pressure type of installation. As air conditioning becomes more extensive in a large building, the duct-work required for conventional types of systems naturally becomes increasingly large and complex, until a point is reached when appreciable building volume is being occupied. This is particularly true of the skyscraper type of building. It, therefore, becomes necessary to keep the size of ducting within manageable limits and the obvious way to do this is by the use of increased air velocities and decreased air volumes. Greater fan-motor horse-power and improved sound control achieve the former, while the use of induction-type air-distribution equipment within the spaces air conditioned, so that the actual supply ducts carry only the "primary" or ventilation supply air, achieves the latter.

THE DOMESTIC FIELD

The growth of the "domestic" air-conditioning field has produced the window unit and the adaptation of warm-air heating systems for summer cooling. Window units, which only two years ago were being produced by less than twenty manufacturers, are now available in over 230 different models, and sales production is expected to exceed 1½m. units this year. Private house "package"-type air conditioners which can be used in conjunction with the warm-air furnace types are now also in production. An interesting field in this connection is opening up with the introduction of the heat pump as a means for both winter warming and summer cooling.

The growth has had interesting results in other fields. First, there has been a tremendous increase in the use of electricity and this has raised considerable problems, not only in existing buildings installing new air-conditioning equipment, but also in city-wide electrical distribution systems. In New York City the overloading of electrical feeders and circuits has become so serious that a special committee, jointly sponsored by the City of New York and the Consolidated Edison Company of New York (which supplies electricity), has been set up to study the matter and to make recommendations for furnishing adequate wiring in all newly erected buildings to permit air conditioning to be installed in the future.

Another development has been in the matter of condenser-water cooling. Many cities in the United States have a very adequate public water supply and when air conditioning was in its infancy it was frequently permitted for city water to be run through the condensers and out to the street sewer, thus obtaining cooling very simply. However, practically every city in the country, in the past ten years, has had to forbid this practice, and to-day it is usually mandatory to cool without water wastage. A further development has taken place in areas where well water is easily available.

DESIGN PROCEDURES

Nearly all air conditioning in the United States, with the exception, of course, of purely industrial installations, is designed from the point of view of summer cooling. Basically, therefore, the well-designed system is arranged to cool and dehumidify in the summer, to provide ventilation during the autumn and spring intermediate seasons, and to furnish heating and ventilation during the winter. Industrial installations, as such, are, of course, mostly designed to furnish year-round controlled conditions.

For summer work the outdoor design temperatures and humidities, as laid down by the American Society of Heating and Ventilating Engineers, are used as standard. Additionally, solar radiation loads for a normal day's cycle are well established, as are internal heat-gain loads, such as are generated by human beings under different types of occupation. Ventilation air rates, *i.e.*, the minimum amounts of fresh air required for ventilation air supply, are usually laid down by local regulations, or follow well-accepted standards. Normally, 15 c.f.m. of air per person, or one change per hour, represents a good average. Air-infiltration rates from outdoors, due to opening doors, window leakage, and so on, are also well known.

Thus the cooling load must take into account the following factors:

(1) Transmission through building structure due to temperature differential.

(2) Solar heat gain.

(3) Internal heat loads, comprising: (*a*) Ventilation air; (*b*) infiltration air; (*c*) heat from lights; (*d*) heat from people; (*e*) heat from other internal sources such as electric motors, cooking appliances, etc.

These constitute the sensible heat gain. For moisture gain, *i.e.*, the latent heat component of the cooling load, the following must be taken into account:

(4) Ventilating-air dehumidification.

(5) Infiltration-air dehumidification.

(6) Moisture gain from people, or other internal sources.

All these varying components do not peak simultaneously and, therefore, a careful estimation must be made of their incidence, which will constitute the maximum load to occur during the normal daylight period of operation. As one of the largest components is the solar heat gain, which varies from hour to hour, the effect of shading by artificial means, such as venetian blinds, must be taken into account, as this can result in an appreciable saving in cooling load.

Having thus determined the maximum cooling load, with both sensible and latent

heat components, the required apparatus dew-point and total air quantity to be circulated are obtained. From this follows the required temperature differential between entering air and maintained room-air conditions. Average figures for total quantity of air circulated usually vary between eight and fifteen air changes per hour, and for temperature differentials between 20 deg. F. and 12 deg. F. Naturally, these figures are dependent upon space configurations. If year-round air conditioning is required, the winter heating and ventilation loads must, of course, be taken into account and balanced against the summer load.

As the total air required to be delivered will be greatly in excess of the outdoor ventilation air drawn in, there will be a high proportion of air recirculated. Additionally, good practice usually calls for some relief in the form of exhaust to be provided, the amount being mostly dependent upon the humidity loads encountered within the conditioned space.

This represents basic design procedure, and it is not proposed here to deal with design details, such as the use of re-heat, by-passing, secondary cooling, etc., as the application of these is entirely dependent upon the individual system's requirements.

Design principles of high-pressure systems are as follows. Essentially, the air furnished to the conditioned space comprises the ventilation air only, which is conditioned in a central plant. This outside air is introduced into the space through an induction unit which generates sufficient secondary circulation to furnish the total supply air volume required. The secondary recirculated air must, of course, be itself cooled as the primary ventilation air naturally cannot furnish the whole of the cooling load. Fig. 1 shows a typical induction unit used with a high-pressure system.

These units are supplied with chilled water for their cooling batteries and a drain for the humidity condensation from the battery. During the winter the same supply and return mains as furnish the chilled water in summer supply warm water to the battery for heating.

Another type of high-pressure system furnishes sufficient primary air so as not to require direct cooling of the recirculated air. In this case the primary air is supplied at a low enough temperature to furnish all cooling required, and a recirculation connection to take some of the space air back to the primary supply equipment is provided.

When intermediate autumn and spring weather conditions are being considered it is important to see that the system design can handle these satisfactorily. It may be necessary to vary the proportions of primary supply and recirculated air to provide greater ventilation effect. Spaces having a high internal heat load, such as large stores, can frequently be cooled effectively without the use of refrigeration, when outdoor temperatures are in the range of 49 deg. to 55 deg. F., and thus a considerable saving in annual operating cost can be effected. Up to 100 per cent. outdoor air may be furnished and, under these conditions, relief by means of exhaust fans or gravity louvres should be provided. This type of installation will thus cycle from extreme summer conditions with a minimum of outdoor ventilation air furnished, through spring and autumn conditions with a maximum of outdoor ventilation air furnished, to extreme winter conditions with a minimum of outdoor ventilation air furnished. Such cycling should naturally be under automatic control from outdoor thermostats. It will be seen that the high-pressure system, where a minimum of outdoor ventilation air only can be furnished, is not suitable for such an application.

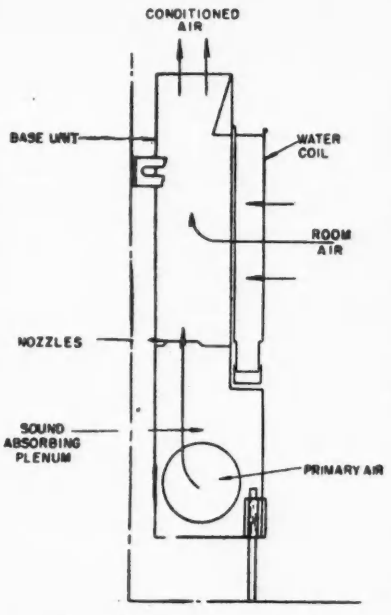


Fig. 1.—High-pressure air conditioning induction unit.

The design of duct-work for conventional installations follows standard procedure. For high-pressure systems, duct-work is circular in section and usually joints are welded or soldered to ensure air-tightness. Additionally, the sheet-metal weights used are slightly heavier than those for ordinary ducting.

Acoustic and heat insulation for ducts and fans, particularly heat insulation where conditioned air is being handled, are extensively used. Glass fibre is increasingly popular for this purpose, due to its low first cost and high resistance to deterioration and moisture, as well as its excellent insulating properties. All joints in insulation covering conditioned air equipment must, of course, be effectively sealed against moisture penetration.

In certain areas in the country where, in the summer, high temperatures and low humidities are encountered, for instance in some of the middle-western, mountainous and desert areas, effective summer cooling can be performed by the use of the principles of evaporative cooling.

COMPONENTS

(1) *Refrigeration Sources.* — For mechanical refrigeration equipment the Freon refrigerants are used almost exclusively. Refrigeration compressors are of two basic types:

(*a*) High-speed reciprocating machines in sizes up to 100 tons of refrigeration output. Four, six or eight cylinders are used and the general arrangement of the compressor follows a similar pattern to that of the modern automobile engine.

(*b*) Centrifugal compressors in sizes ranging from 100 tons to 1,500 tons of refrigeration output.

In the smallest sizes of compressor used for "package"-type air-conditioning units the "sealed-in" machines are common. This design calls for motor and compressor in one sealed casing with a common mounting, which is of similar type to that found in a domestic refrigerator. Outputs range from ½ ton to 5 tons of refrigeration. The compressors, of the radial reciprocating type, are direct-driven. Recently, there has been an extension of this type of equipment to larger sizes of compressor, one make now available ranging up to 120 tons of refrigeration capacity.

With the increasing use of natural gas there has been a growth in the manufacture of the absorption type of machine. Such equipment is now manufactured up to 120 tons of refrigeration output capacity.

For conventional compressors of the centrifugal type, both electric motor and steam-turbine drive are employed. Where a street steam supply is at hand, the latter type has come into increasing use, especially in localities where cheap summer steam rates may be obtained.

If well water at suitable temperatures is available, this is frequently used as a refrigerating source, or if the temperature is too high to give proper apparatus dew point of the primary supply air, the water may be used in conjunction with a mechanical refrigeration machine, in which case it will be passed through the chiller of the machine to have its temperature suitably lowered for distribution to the air cooling coils. Savings up to 50 and 60 per cent. in mechanical refrigeration capacity may be effected by the use of these "split" systems.

The actual cooling and dehumidifying batteries are served in one of two ways: First, by their use as direct evaporative coolers; however, the use of this method of cooling is generally restricted to smaller "package" and unit-type equipment and many safety codes also restrict its usage. Second by the circulating of chilled water through them, from a flow and return mains system. Pipe-work for these systems is arranged similarly to that for a conventional two-pipe hot-water heating installation, and the water is chilled by being passed through the central refrigeration plant evaporator. Such systems are used for all larger installations.

Refrigeration cycles naturally vary in efficiency with size and overall design. However, one brake horse-power per ton of refrigeration effect and an overall coefficient of performance of 5.0 are more or less standard.

(2) *Cooling Towers and Evaporative Condensers.* — Forced-draught cooling towers and/or evaporative condensers are customary for refrigeration condenser cooling. The evaporative condenser, which is generally used up to about 150 tons of refrigeration capacity, has the advantage of cheapness in first cost. For larger installations, the forced-draught wood, or metal louvred, cooling tower is common.

Well water is also used for condenser cooling, although disposal is a problem.

(3) *Fans, Duct-work, Grilles and Diffusers.*—These follow conventional ventilating design except where high-pressure

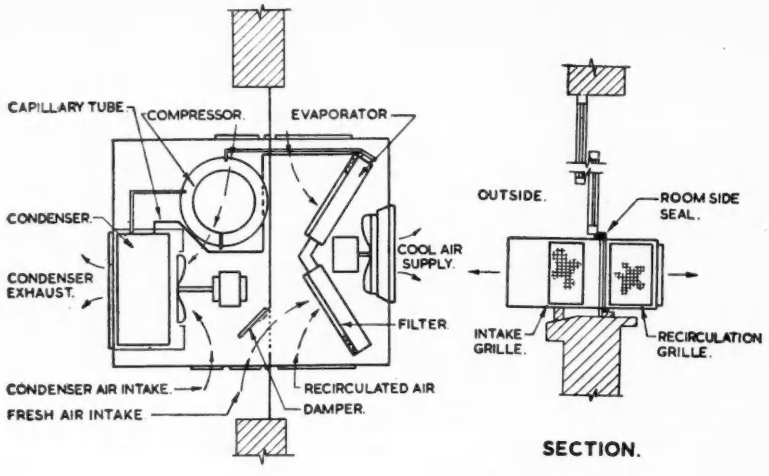


Fig. 2.—Typical arrangement of window unit.

installations are used. Here, the fans are designed for operation up to 7 to 10 in. w.g., and duct-work is circular in section and welded or soldered throughout to prevent air leakage.

Grilles and diffusers are of the directional control type and must be carefully selected to give the correct air placement, at its design temperature differential from the room air, to prevent draughting. With high-pressure installations, sound-deadening chambers are placed directly behind the diffuser or grille.

AIR-COOLING BATTERIES

(4) *Air-Cooling Batteries.*—Air-cooling and dehumidification batteries, known as "cooling coils," are usually of the finned, tubular type and, where chilled water is used, it is considered good practice to install a minimum of six rows of tubes in the direction of the air stream, in order to obtain adequate air cooling. Direct evaporative cooling coils may have less than six rows, dependent on the temperature of the refrigerant, and each individual tube is fed through a distribution header from the expansion valve.

Where well water is used it is necessary that the cooling-battery tubes shall be cleanable and a distribution header, with removable cover, be furnished.

(5) *Air-Conditioning Units.*—The addition of a cooling coil section to the ventilating unit makes this into a self-contained air-conditioning unit, suitable adjustment in air volume, of course, being allowed. If the cooling coil is a direct expansion one, the refrigeration compressor, in the smaller sizes, may also be housed within the casing. Such equipment forms a "package" air-conditioning unit. Such units are available up to capacities of 25 tons of refrigeration.

These units may be arranged for condenser cooling through a water-circulation system, or are available for direct connection to an evaporative condenser, mounted in a similar type of casing. Such equipment is in common usage for small stores, individual suites of offices, and so on.

Besides these types, fan-coil units, for mounting under windows, are also used. The coils are arranged for chilled-water circulation from a central system.

With the larger types of high-pressure installation, the induction unit shown in Fig. 1 is generally used, and these are also arranged for under-window mounting.

Perhaps the most interesting recent development has been the production of the "window" unit. Essentially this is designed for the air conditioning of individual rooms and the entire apparatus, comprising a sealed-in type compressor, cooling coil, air-cooled condenser, circulating fan, filters and controls, all mounted in one casing, is arranged for installation in the lower part of the frame opening of the conventional sash window. Duties range from ½ ton to 1 ton refrigeration capacity, with the overall casing size about 30 in. in length, 15 in. in height and 24 in. in width. The unit is installed in the window opening, partially projecting into the room and partially outside the building. The condenser cooling air is circulated through the outdoor part of the casing, and a damper control is provided to allow for the admission of outside air to the room and, in some cases, to exhaust air as well. Fig. 2 illustrates a typical unit and its mounting.

The room face of these units is styled to present a decorative appearance and may be obtained in varying colours. The latest types use the heat-pump principle to give winter warming as well as summer cooling.

(6) *Chemical Dehumidification Equipment.*—For industrial air-conditioning processes, or where especially low humidities are required, chemical dehumidification equipment, of the package type, is used. Lithium chloride or silica-gel are most frequently employed with gas as the heat source for regeneration.

The unit is complete with air-circulating fan, filters, chemical dehumidification chamber, complete chemical circulating system and pump, regeneration chamber, and also automatic controls to give continuous operation.

(7) *Automatic Controls.*—The application of automatic controls is practically universal, and ranges from the use of a simple room, or recirculated air, thermostat controlling the refrigeration medium, to comprehensive year-round systems which automatically control summer cooling and dehumidification, intermediate season ventilation, and winter warming and humidification.

The more comprehensive installations are always of the pneumatic type. Three-way valve control is usually used for chilled water-fed cooling coils. For direct expansion installations the controls may be applied to perform individual or multiple cylinder unloading on the compressor, speed control, or just start and stop. For larger systems, outdoor-indoor control is used extensively with an outside thermostat, re-setting the indoor thermostat control to a definite indoor-outdoor temperature relationship. Thus, with an outside temperature of 95 deg. F. an indoor temperature of 80 deg. F. will be maintained. With an outside temperature of 87 deg. F. an indoor temperature of 77 deg. F. will be maintained, and with an outside temperature of 80 deg. F. an indoor temperature of 70 deg. F. will be maintained. Zone control is extensively used for larger installations with individual reheaters or by-pass dampers to each zone to provide independent conditions

SYSTEMS

Types of systems representing current installation practice may be classified as follows:

(1) *Conventional Systems.*—The simplest form comprises the "package"-type air-conditioning unit with distribution duct-work. Maximum range is usually

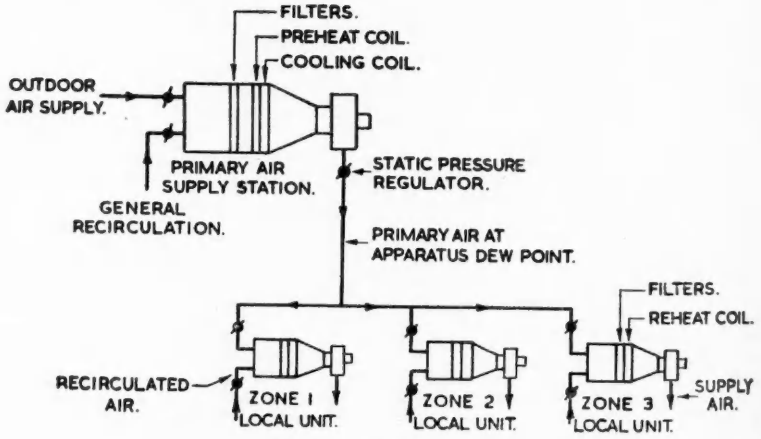


Fig. 3.—Multi-zone system.

in the region of 25 to 35 tons of refrigeration capacity.

(2) *Larger Multi-Zone Conventional Systems.*—These are, broadly, of two types:

(*a*) A number of individual zones, each having its own circulating fan, reheater and filter, may be fed from a central primary air-supply station. The station will comprise a circulating fan, filters, cooling coils and/or humidifier, and will supply air at the apparatus dew point to the individual zones. Fig 3 illustrates, diagrammatically, such a system.

Many individual arrangements may be adopted to suit each zone requirement, so that the illustration is perforce of a rather general nature. It may be noted that some air is recirculated to the central supply station so that more than purely ventilating air is furnished to each zone.

(*b*) A number of individual air-conditioning units may be served by a common chilled-water circulating system from a central refrigeration plant. Each unit would be of the type described and, in effect, each serving its own zone comprises a separate little air-conditioning system. Systems of type (*b*) are to-day in considerably greater usage than those of type (*a*).

(3) *High-pressure Systems.*—These are basically of two types:

(*a*) *Perimeter Systems.*—This type has come into use in the past eight years for the larger multi-storey buildings. It comprises a central station supply, furnishing cooled high-pressure primary air to under-window units of the induction type. The primary air is furnished through circular ducts, at about 7 in. w.g. initial pressure, and the summer cooling and/or winter heating coil in each of the units is fed from a water circulating system which furnishes chilled water in the summer and hot water in the winter. Due to the small size of water mains and individual unit coils, the problem of control lag, mentioned later, does not arise.

About 50 c.f.m. of primary air is normally furnished to each unit and, with the induction effect obtained, the unit itself will discharge 200 to 250 c.f.m. of conditioned air to the room. Fig. 4. illustrates a typical arrangement for each unit, with connections.

(*b*) *High-pressure Conventional Systems.*—This type represents the latest development in air-conditioning installations. Basically, they are of conventional principle, except that the air, instead of being supplied at low pressure and normal velocities through conventional duct-work, is supplied at high pressure, 7 in. to 8 in. w.g., through circular, welded or soldered duct-work with velocities up to 4,000 f.p.m. Each air diffuser is furnished with a sound-absorbing chamber and is also designed to induce some degree of recirculation, although no individual air cooling or heating control is furnished. As a result of the local recirculation, the main fan provides about two-thirds of the total conditioned air supply required.

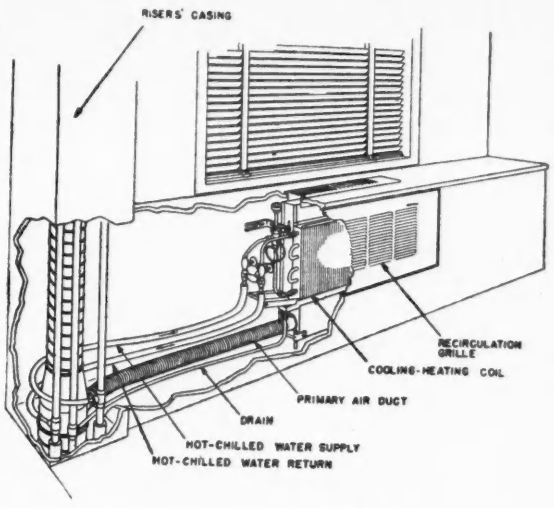


Fig. 4.—Perimeter-system unit arrangement.

(4) *Combined Panel-Cooling Systems.*—These are as yet in their infancy and, so far, have not been very widely used. Essentially, panel cooling is used in conjunction with conditioned-air supply to furnish the necessary summer comfort cooling. It is found that the panels will usually furnish sufficient cooling to remove the internal heat from the lights and offset the temperature differential heat gain from outdoors in a normal office-type building. Conventional air-conditioning installations are then used to provide the necessary dehumidification and offset the solar and people heat gain to the building. Due to the load taken by the panels, the amount of conditioned air supply required is substantially reduced over that from a purely conventional system. In the winter, the advantages of panel heating with good ventilation are obtained.

A patented aluminium metal pan-type false ceiling using the panel pipes as main supports is in production and has already been used for several installations. The ceiling has the advantage of being adaptable to an acoustic treatment.

SIZE OF MAINS

In the description of air-conditioning units, other than perimeter ones, mention has been made of the use of separate heating and cooling coils and it may be wondered why one coil only is not used for both heating and cooling functions. Conventional design calls for a temperature rise of about 8 deg. F. between flow and return mains when circulating chilled water. For winter warming the corresponding figure would be 30 deg. F. drop. Thus, if a common system of mains is used for both heating and cooling, they must be sized for summer duty, as nearly four times the amount of chilled water must be circulated as hot water for heating.

As a result, the control of winter water temperatures becomes very sluggish, due to the large water volume and slow rate of circulation through the mains and in intermediate weather, when rapid cycling from cooling to heating and vice versa becomes necessary, effective control is almost impossible. In practice, therefore, it is best to provide a steam system with its own heating coils for winter warming, and use the chilled-water system and cooling coils only for summer.

With high-pressure perimeter systems, where individual riser mains and unit coils are relatively small, the problem is not so acute and combined chilled and hot-water circulation can be used.

TOWN PLANNING DECISION

Green Belt Housing Scheme Rejected

BROMSGROVE RURAL COUNCIL'S effort to preserve a green belt to prevent the spread of Birmingham's housing and industry southward into Worcestershire has been confirmed by the Minister of Housing.

The Minister rejected an appeal by Mr. R. O. Warder, of Hopwood Grange, Alvechurch, who wished to build 106 houses on an 18-acre site at Alvechurch, and said he did so because he agreed with the council's intention to preserve the green belt. It was stated for Mr. Warder at the appeal that the site was 2½ miles from the Birmingham city boundary at Alvechurch and lay between the canal and existing houses which fronted the Birmingham road. It was stated on Mr. Warder's behalf that the council had once shown him a plan indicating that this site was ripe for development, and it was contended that he had been therefore "grossly misled" as a result of this change of policy, as he had already by then agreed to buy the land.

It was also submitted that the land was not said to be in a rural area, as it was bounded on two sides by residential development. It was, in fact, the centre of a developed area, and the proposals to build there could not affect the green belt. It was further pointed out that the council had resolved to build a new estate and, in addition, land near to the site was being used for housing.

On behalf of the council it was stated that they were anxious to preserve the green belt, particularly at this point, where there was constant pressure for permission to proceed with estate development in the Alvechurch area.

It was admitted that a map had been prepared showing the appeal site as suitable for development, but early this year it had been decided to reconsider the whole question of allocation of land for residential purposes in the district and the map had been withdrawn.

The Minister stated that he had considered the appeal carefully, but he attached great importance to the preservation of the green belt.

OFFICIAL NOTIFICATION

Transfer of Responsibility for Linseed Oil to BoT

As from August 22 linseed and linseed oil will be among the commodities which will be dealt with by the Board of Trade instead of by the Ministry of Agriculture, Fisheries and Food as at present (i.e. the Board of Trade will become the "Production Department" for these commodities).

The Builder

CURRENT RATES OF WAGES

AS FROM APRIL 18, 1955. **(Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)**

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	4/-	3/11½	3/11	3/10½
Labourers	3/5½	3/5	3/4½	3/4

Town.	*Grade.*
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A2
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone R.D. (parts of)	A
Aylesbury	A2
Aylesham	A2
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A
Barnoldswick U.D.	A
Barnsley C.B.	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D.(exc. Willough-by-on-the-Wolds A1)	A
Basingstoke	A1
Bath	A
Batley M.B.	A
Baxterley	A1
Beaconsfield & District	A1
Beari	A
Beccles	A2
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick Borough	A
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Binchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U.D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A1
Breconshire, County of...	‡A2
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Broughton, Flint	A
Buckley	A
Bungay	A2
Burnham-on-Crouch	A2
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A2
Carlisle	A
Carmarthenshire, Cnty of	‡A2
Caernarvonshire, Cnty. of	‡A2
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippenham Within and Hardenhuish)	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A1
Crewe	A
Cromer	A1
Crook and Willington U.D.	A
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A2
Doncaster C.B.	A
Dorking	A
Dorset, County of (excepting Poole, Swanage and Wimborne A1)	A2
Dover	A2
Dovercourt	A
Driffield U.D.	A1
Droitwich M.B.	A
Dudley C.B.	A
Dunstable	A
Durham City	A
Eastbourne	A
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A2
Epping	A
Exeter	A
Fakenham	A2
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough U.D.	A
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A
Gravesend	A
Great Yarmouth	A
Grimsby C.B. & R.D.(part)	A
Grimsby R.D. (remainder)	A2
Guildford District	A2
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate	A
Hartlepool	A
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Hinckley U.D.	A
Hitchin	A
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A1
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Lancaster	A
Leamington M.B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A1
Letchworth	A
Lewes	A2
Lichfield M.B.	A
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A1
Lowestoft	A
Loxton	A2
Luton	A
Lyneham (Devon)	A2
Macclesfield	A
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A1
Malvern U.D.	A1
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough U.D.	A
Maryport	A
Matlock U.D.	A
Melksham	A2
Melton Mowbray U.D.	A1
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A
Milford Haven	A1
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
,, Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A2
Ramsgate	A2
Rayleigh	A
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A
Saxmundham	A2
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A
Sleaford U.D.	A2
Slough	A
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A1
Stratford-on-Avon M.B.	A
Sunderland District	A
Sunningdale	A1
Sutton Coldfield M.B.	A
Swaffham	A2
Swanage	A1
Swansea	A
Swindon	A
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A2
Thorpe Bay	A
Thurrock U.D.C. Area	A
,, North of, to Billericay	A
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington U.D.	A
Wells (Norfolk)	A2
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A1
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A2
Wilmslow	A
Wilts. County of	‡A2
Winchester	A1
Windermere	A2
Windsor and Eton	A
Wisbech	A2
Witham	A1
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A2
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A2
York	A

For Birkenhead, Liverpool and London the rates are:—Craftsmen, 4s. 1½d.; Labourers, 3s. 7d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 4s. 1d.; Labourers, 3s. 6½d. †Plus 2d. per working day. ‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters and Joiners providing own tools when employed in establishments operating under the Supplementary Rules for Woodworking Factories and Shops, receive 2d. per day; when employed on other building industry work, 4d. per day.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 3s. 1½d. per hour. Women engaged on work other than craft processes, 2s. 9½d. per hour.

For Building Trade Wages in Scotland see page 374.

The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials, not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchants' warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	4	6
Pit Sand	"	1	2	11
Washed Sand	"	1	5	1
¼ in. Shingle	"	1	1	5
¼ in. Broken Brick	"	1	0	0
Pan Breeze	"		10	3
Fine or Coarse Foamed Slag Aggregate ... 2 yds. of fine and 2.6 yds. of coarse per ton	per ton	3	0	9

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£	s.	d.
Best British Portland Cement. Standard Specification delivered Charing Cross area. 6-ton loads and upwards, site	per ton	5	1	6
1 to 6 tons, site	"	5	13	6
Rapid Hardening Cement in 6-ton loads and upwards to site	"	5	12	0
1 to 6 tons do. site	"	6	4	0
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots	"	7	3	0
Other colours according to colour.				
In 4-ton lots from 295s. 0d. to 685s. 0d. per ton.				
White Portland Cement	"	13	2	0
Under 1 ton	per cwt.		15	7
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6	14	0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £11 5s. 0d. to £14 0s. 0d. (1-ton loads and upwards).				
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	"	14	8	3
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	"	6	8	9
Moler Mortar Powder for Flue Bricks (London sites)	per cwt.	1	10	0

BRICKS

		£	s.	d.
Full Loads.				
First Hard Stocks	per 1,000	11	17	0
Second Hard Stocks	"	10	16	0
Mild Stocks (Kiln Burnt)	"	9	1	6
Mild Stocks	"	8	16	6
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2⅛ in. Nominal Fletton Bricks to sites in W.C. District Commons	"	5	13	0
Cellular do.	"	5	13	0
Keyed do.	"	5	15	0
Rustics	"	6	18	0
Cellular Rustics	"	6	18	0
Single Bullnose do.	"	6	13	0
Sandfaced	"	7	13	0
Best Blue Pressed Staffs (London Stations)	"	27	5	6
Do. Bullnose (London Stations)	"	27	19	6
Blue Wire Cuts (London Stations)	"	24	14	0
Midhurst Lime Bricks (London sites)	"	10	3	0
Uxbridge Whites (London sites)	"	9	6	6
Special Purpose Sandlime Bricks (London sites)	"	7	14	0
2½ in. Best Stourbridge Fire Bricks (London stations)	"	26	6	3
3 in. do. (London stations)	"	31	12	0
2⅞ in. Moler Flue Bricks (London sites)	"	36	0	0
2⅛ in. Machine-made Sandfaced Red Facings (London sites)	"	14	4	6
2⅛ in. Machine-made Multi Red Facings (London sites)	"	14	13	6
2⅛ in. Hand-made Sandfaced Red Facings (London sites)	per 1,000	14	11	0
2⅛ in. Hand-made Sandfaced Multi-Colour Facings (London sites)	"	14	15	6
Hand-made Sandfaced Cherry Red Facings. Berkshire district (London sites)	"	17	5	6
Hand-made Sandfaced Multi-Colour Facings. Berkshire district (London sites)	"	17	5	6
Rubber Bricks for gauged arches (London sites)	"	41	10	0
2⅛ in. Surrey Clamp Burnt Multi Stock Facings (London sites)	"	13	6	0
2⅛ in. Surrey Kiln Burnt Multi Stock Facings (London sites)	"	14	18	0
Glazed Bricks (London Sites), White, Ivory, Brown— Stretchers	"	64	0	0
Headers	"	63	0	0
Quoins, Bullnose and 4½ in. Flats	"	80	0	0
Double Stretchers	"	85	0	0
Double Headers	"	77	10	0
One side and two ends	"	87	0	0
Two sides and one end	"	89	10	0
Splays and Squints	"	83	0	0

Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 17½% for Best quality and plus 17½% less 10% for Second quality.

PARTITION SLABS, etc.

Delivered Central London Area.

	Minimum lorry loads.				
Hollow Clay Partition Blocks (Keyed)					
*2 in.	140 yds.	per yd. sup.	4	4	
*2½ in.	140 yds.	"	4	7	
*3 in.	120 yds.	"	5	4	
Building Blocks (Keyed)					
*4 in. (6 cavity)	95 yds.	"	6	9	
6 in. (8¾" × 5⅝")	1,250 Blocks	per 1,000	26	6	0
*Half blocks at no extra charge.					
Clinker Concrete					
2 in.	100 yds.	per yd. sup.	3	9	
2½ in.	85 yds.	"	4	4	
3 in.	75 yds.	"	5	3	
4 in.	55 yds.	"	6	5	
Cranham					
2 in.		"	6	8	
2½ in.		"	7	4	
3 in.		"	8	7	
4 in.		"	10	7	
4½ in. Load bearing quality		"	11	8	
Moler Partition Blocks					
2 in.	150 yds.	"	15	6	
2½ in.	120 yds.	"	15	9	
3 in.	100 yds.	"	16	0	
4 in.	90 yds.	"	19	0	
Thermalite Partition Blocks					
2½ in.	120 yds.	"	6	11	
Thermalite Loadbearing Insulating Blocks					
3 in.	100 yds.	"	8	3½	
4 in.	75 yds.	"	10	9	
5 in.	60 yds.	"	13	5	
6 in.	50 yds.	"	16	1½	
8 in.	37½ yds.	"	1	1	6
9 in.	33 yds.	"	1	4	3½
Floor Blocks and Filler Tiles					
3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads		per 1,000	33	6	0
4 in. do.		"	35	14	0
5 in. do.		"	42	10	0
6 in. do.		"	47	17	0
7 in. do.		"	58	8	0
8 in. do.		"	68	9	0
10" × 3" × ⅝" Filler Tiles in multiples of 10 tiles		per 1,000 multiples	56	15	0
12" × 3" × ⅝" do.	do.	" "	64	10	0
10" × 4" × ⅞" do.	do.	" "	71	0	0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Standard List prices delivered London Area.

	Over 2 tons	Over 100 Pieces under 2 tons	Under 100 Pieces under 2 tons
Best Quality	+77½%	+107½%	+117½%
B.S.S. Best do.	+10% +77½%	+10% +107½%	+10% +117½%
Tested Quality	+37½% +77½%	+37½% +107½%	+37½% +117½%
B.S.S. Tested do.	+47½% +77½%	+47½% +107½%	+47½% +117½%

STONEWARE DRAIN PIPES, etc.—*continued*

	£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths) ... per 1,000	11	3	6
4 in. do. ... ... ,,	14	14	6

DAMP COURSE

Hessian base bitumen 7 lb. per yd. sup. in 24 ft. rolls cut to wall widths in lots of £6 value and over delivered London area ... ... per yd. sup.		3	1
Asbestos base ditto 7 lb. per yd. sup. do. do. ,,		5	0
Lead lined bitumen ditto 9½ lb. per yd. sup. do. ,,		11	3
18 in. ×9 in. British damp course slates ... ... per 1,000	38	6	0
14 in. ×9 in. do do. ... ... ,,	29	11	0
9 in. ×9 in. do. do. ... ... ,,	18	2	6
18 in. ×4½ in. do. do. ... ... ,,	17	15	6
14 in. ×4½ in. do. do. ... ... ,,	14	1	9
9 in. ×4½ in. do. do. ... ... ,,	9	7	6

STONE

Bath Stone—			
Monks Park ... ... per ft. cube		8	0
St. Aldhelm Box Ground ... ... ,,		9	0
Delivered in railway trucks at South Lambeth B.R. Western Region			
Doulting Stone Random Blocks. Delivered London area ,,		8	9
Beer Stone. Delivered London area ... ... ,,		8	3
Portland Stone—			
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region ... ... ,,		8	3½
Yorkshire Stone—Blue Robin Hood Quality. Delivered to site London in 6-ton lots.			
9 in. × 3 in. Rubbed, weathered, throated and stooled cills ... ... per ft. cube	3	10	8
12 in. × 6 in. do. do. ... ... ,,	2	10	6
12 in. × 3 in. Plain coping, twice throated ... ,,	1	19	0
12 in. × 3 in. Weathered and twice throated coping ,,	2	12	0
14 in. × 6 in. do. do. ... ... ,,	2	7	0
4½ in. × 9 in. Plinth, rubbed on top and face ... ,,	2	2	0
3 in. sawn two sides Slabs, random sizes ... ... per ft. sup.		7	6
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ... per ft. cube	1	5	9
Do. do. fair one edge for fair faced brickwork	1	10	6
Hard York—			
12 in. × 2 in. Square Steps, rubbed on top and edge per ft. run		9	0
14 in. × 3 in. Round-nosed Steps, rubbed on top and front ... ... per ft. cube	2	8	0
12 in. × 6 in. Plain Steps, rubbed top and front ... ,,	2	2	0
2 in. Rubbed and Jointed Paving, given sizes ... per ft. sup.		8	6
2 in. Sawn Paving, edges squared, in random sizes per yd. sup.	2	19	3

TILES AND PANTILES

Delivered London area by road in 6 tons or over per 1,000			
Machine-made Pantiles and French pattern Tiles from Lincolnshire district	29	8	0
Hand-made Pantiles Berkshire district	50	9	0
Hand-made Double Roman Bridgwater district	58	13	6
Hand-made 10½ × 6½ tiles Berkshire district	14	1	6
Machine-made 10½ x 6½ Staffordshire district	13	18	9
Hand-made Hip and Valley tiles per doz.	1	10	0
Machine-made Hip and Valley tiles do.	1	8	0
Concrete tiles 10½ × 6½	7	14	6
do. Interlocking (49S)	18	9	6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual			
24 × 12	124	17	4
22 × 12	103	13	8
22 × 11	93	13	6
20 × 12	88	9	0
20 × 10	82	7	9
18 × 10	59	12	9
18 × 9	52	14	6
16 × 10	49	1	3
16 × 8	38	3	8

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

Softwood—					
Joinery quality	Ex. Wharf	per standard	£110 to £135		
Carcassing quality	do.	,,	£98 to £102		
1 in. Tongued and Grooved Flooring	do.	,,	£108	0	0
Hardwood—					
Mahogany—African S.E. ...	do.	per ft. cube	1	10	0
do. Honduras do. ...	do.	,,	3	5	0
Oak European do. ...	do.	,,	2	5	0
do. Japanese do. ...	do.	,,	2	10	0
do. English Logs sawn ...	do.	,,	1	17	6
Teak 8 in. average S.E. ...	do.	,,	3	15	0
Walnut African Logs sawn ...	do.	,,	1	5	0

DOORS (in Lots I-II)

Delivered London area.	£	s.	d.
1½ in. 4 Horizontal Panel Pattern 4 in. deal			
2 ft. 0 in. × 6 ft. 6 in. ... ... each	1	12	0
2 ft. 3 in. × 6 ft. 6 in. ... ... ,,	1	13	0
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	1	14	0
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	1	16	6
2 in. do. but top panel open. Pattern 4 × G in deal			
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	2	9	0
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	2	11	6
2 in. Panel, top panel open. Pattern 2 × G in deal			
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	2	1	9
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	2	3	6

SUNDRIES

Delivered London area.			
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton) ... ... per yd.		5	8
1½ in. do. (67 yds. to 1 ton) ... ... ,,		7	4
2 in. do. (52 yds. to 1 ton) ... ... ,,		8	11½
2½ in. do. (45 yds. to 1 ton) ... ... ,,		10	3
3 in. do. (39 yds. to 1 ton) ... ... ,,		11	5½
Quantities under 1 ton add 1d. per ½ in. of thickness.			
½ in. imported insulation Board, quantities over 5,000 sq. ft. per 100 sq. ft.	2	2	6
⅛ in. Hardboard do. ... ... ,,	2	1	6
5/32 in. do. do. ... ... ,,	3	2	6
5/16 in. Asbestos Flat Building Sheets ... ... per yd. sup.		3	5
¼ in. do. ... ... ,,		4	7
Roofing Felt, 1-ply ... ... ,,		1	6
do. 2-ply ... ... ,,		1	9
Best Scotch Glue in slabs ... ... per ½ cwt.	5	0	0
do. pearl ... ... ,,	5	5	0
Croid Glue ... ... 28 lb.	2	6	0
Cut Nails 3 in. (1-ton lots) ... ... per ton	62	10	0
do. 4 in. and up (1-ton lots) ... ... ,,	59	0	0
Wire Nails, 3 in. (4-cwt. lots) ... ... per cwt.	3	0	9
do. 4 in. and up (4-cwt. lots) ... ... ,,	2	16	11

METALS

STEEL JOISTS, ETC.

Basis Joists—			
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in. 12 in. × 6 in. plain cut to lengths delivered London area ... ... per ton	41	0	0
Extra for sizes			
3 in. × 1½ in. 4 in. × 1¾ in. ... ... ,,	3	10	0
3 in. × 3 in. ... ... ,,	2	10	0
4 in. × 3 in., 10 in. × 4½ in. ... ... ,,	1	10	0
5 in. × 2½ in., 5 in. × 3 in. ... ... ,,	1	15	0
4⅜ in. × 1⅜ in. ... ... ,,	3	5	0
5 in. × 4½ in. 7 in. × 3½ in. 13 in. × 5 in. ...per ton		15	0
6 in. × 3 in. 24 in. × 7½ in. ... ... ,,	2	0	0
6 in. × 4½ in. 7 in. × 4 in. 8 in. × 4 in. ... ,,	1	5	0
9 in. × 4 in. 10 in. × 5 in.	1	0	0
12 in. × 5 in. 22 in. × 7 in.			
9 in. × 7 in. 10 in. × 8 in. 12 in. × 8 in.			
14 in. × 5½ in. 14 in. × 6 in. 14 in. × 8 in.			
15 in. × 5 in. 15 in. × 6 in. 16 in. × 6 in. ,,		10	0
16 in. × 8 in. 18 in. × 6 in. 18 in. × 7 in.			
18 in. × 8 in. 20 in. × 6½ in. 20 in. × 7⅛ in.			
Steel angles average price ... ... ,,	42	15	0
Steel tees average price ... ... ,,	43	15	0
Fabricated work delivered London—			
R.S. Joists cut and fitted ... ... ,,	57	10	0
Compound girders ... ... ,,	63	5	0
Stanchions ... ... ,,	68	10	0
Compound stanchions ... ... ,,	72	10	0
In Roof Work—Trusses and Purlins ... ... ,,	85	5	0
Average prices not for awkward work.			
Angle cleats and ⅝ in., ¾ in. and ⅞ in. bolts average price London area ... ...per cwt.	4	15	0

FERRO-CONCRETE BARS

Mild Steel Ferro-Concrete bars to BSS785 ex London			
Stock ⅝ in. diam., and upwards ... ... ,,	42	8	6
½ in. diam. ... ... per ton extra	4	7	0
7/16 in. do. ... ... ,,	3	7	0
⅜ in. do. ... ... ,,	2	9	6
⅛ in. do. ... ... ,,	1	12	0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts:

Galvanised Tube—	W.I. Fittings	Malleable Fittings
Class A + 7½%		
Class B + 18½%	Light + 32½%	Malleable List—32½% + 40%
Class C + 35¾%	Heavy + 40%	
Black—		
Class A − 14½%		
Class B − 2½%	Light + 19½%	Malleable List—32½%
Class C + 11½%	Heavy + 27½%	

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	3/5½	3/2	/11
3½ in.	3/10½	3/5	/11
4 in.	4/11½	3/10	1/4
4½ in.	5/5½	4/4	1/7
5 in.	6/1	4/8	1/11

METALS—*continued*

C.I.O.G. Gutters

	Gutters	Nozzle	Stop Ends
3 in.	4/7	4/1	1/1
3½ in.	5/1½	4/1	1/4
4 in.	5/8	4/4	1/7
4½ in.	6/1	4/11	1/11
5 in.	6/8	5/8	2/2

C.I Rain-water Pipes

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	7/7	3/10	5/7
2½ in.	7/7	4/4	7/5
3 in.	8/6	5/5	8/1
3½ in.	9/8	6/4	9/8
4 in.	11/2½	7/9	11/6

L.C.C. Coated Soil Pipes

2 in.	8/7½	6/8	8/1
2½ in.	9/0½	7/4	10/1
3 in.	10/2	8/1	11/11
3½ in.	11/4½	10/1	13/11
4 in.	12/11½	11/3	16/5

Above prices for gutters, rain-water and soil pipes for under 5 cwt. lots only. Lots over 5 cwt. see List No. 3300 dated February 1, 1955, plus 7½% and tonnage allowance. 4-ton lots 5 per cent, 2-ton lots 2½ per cent.

L.C.C. Coated Drain Pipes

	In 9-fts. cwt.	qr.	lb.	per yd.	Bends	Branches
4 in.	1	1	17	27/4	19/3	34/–
6 in.	2	0	1	40/9	51/–	81/9

Asbestos Rain-water Pipes and Fittings

All less 17½ per cent. discount.

		2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths	per yd.	3/9	4/–	4/10	6/5
Shoes	each	2/5	2/8	3/2	4/3
Single Branches	„	3/9	4/6	5/4	7/6
Bends square or obtuse	„	2/8	2/11	3/9	5/4
Swan Necks 4½ in. proj.	„	2/11	3/9	4/3	5/11
do. 6 in. do.	„	3/2	3/9	4/10	6/5

Asbestos O.G. Gutters and Fittings

		4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	per yd.	3/7	3/11	4/8	5/7½
Drop ends	each	2/10	3/4	3/10	4/7
Stop Ends	„	/10	/11	1/–	1/2
Angles	„	2/11	3/5	4/1	4/10
Nozzles	„	2/10	3/4	3/10	4/7
Union Clips	„	1/5	1/8	2/1	2/5

Asbestos Half-Round Gutters and Fittings

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	per yd.	2/6	2/11½	3/0½	3/7	5/–
Drop ends	each	2/1	2/5	2/8	2/11	4/3
Stop ends	„	/9	/10	/11	1/–	1/2
Angles	„	2/5	2/8	2/11	3/2	4/3
Nozzles	„	2/1	2/5	2/8	2/11	4/3
Union Clips	„	1/–	1/1	1/2	1/4	2/–

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	45 7 6
Mild Steel Bars	39 16 6
Mild Steel Hoops	41 3 6

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft Sheets C.R. and C.A.—	
20 gauge	52 8 6
24 gauge	54 18 6
26 gauge	57 18 6
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	59 9 0
24 gauge	62 19 0
26 gauge	68 4 0
Galvanised flat sheets C.R. and C.A.—	
20 gauge	60 19 0
24 gauge	64 9 0
26 gauge	69 14 0

ALUMINIUM AND ALUMINIUM ALLOYS

(Base prices)		£ s. d.
Sheet BS 1470 SIC 18 SWG (36 in. wide)	per lb.	2 7½
Sheet BS 1470 N 53 Utility 18 SWG (36 in. wide)	„	2 4½
Coiled strip BS 1470 S1C 18 SWG (24 in. wide)	„	2 6½
Coiled strip BS 1470 NS 3 Utility 18 SWG (24 in. wide)	„	2 4
Coiled strip for flashing 99.7% purity 22 SWG (12 in. wide)	„	2 9
Corrugated sheet BS 1470 NS 3 Utility Circular Profile 8 ft. × 32 in. × 20 SWG	per sheet	1 8 6
Corrugated sheet BS 1470 NS 3 Utility Industrial Profile 8 ft. × 31⅛ in. × 20 SWG	„	1 13 9
Corrugated sheet BS 1470 NS 3 Utility Mansard Profile 8 ft. × 31⅛ in. × 20 SWG	„	1 7 8
Extruded section BS 1476 E1C simple moulding	per lb.	2 5
Extruded section BS 1476 E1C 1 in. diam. round	„	2 2½
Extruded section BS 1476 HE10WP simple angle	„	2 8
Extruded section BS 1476 HE10WP 1 in. diam. round	„	2 7
Tubing BS 1471 T1C 1½ in. O/D × 20 SWG	„	3 11½
Tubing BS 1471 HT10WP 1½ in. O/D × 20 SWG	„	5 2

PLUMBERS' BRASS WORK, etc.

Delivered in London area.

All per doz.	M.O.H. ⅛ in.	¼ in.	½ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	87/–	128/8					
Toilet bib cocks for iron	109/–	158/5					
Screwdown stop cocks for iron	66/–	95/9	188/–	363/–	522/6		917/6
do. with two unions for lead	89/–	132/–	234/4	472/–	623/6		1389/6
Double nut boiler screws	18/8	26/5	47/6	48/6	67/–		93/6
Heavy Croydon ball valves	77/–	193/6	312/5	568/8	734/10		—
Plumbers' union brass lead to iron	19/6	23/6	38/6	52/10	70/6		165/–
	1¼ in.	1½ in.	2 in.	3 in.	3½ in.		4 in.
Caps and screws	33/–	40/8	59/6	92/5	118/10		155/3
Brass sleeves		31/11	31/11	56/2	74/10		91/5
		1¼ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.		
Lead P. trap with brass cleaning screws	65/5		81/9	130/10			223/6
Lead S. trap do.	79/–		98/1	160/10			288 10

Solder		s.	d.
Plumbers'	per lb.	3	8
Tinmen's	„	4	5
Blow pipe	„	4	6

Copper Tubes and Sheets

Copper tubes BSS 659/1944 on the basic price of 42⅞d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.		d.
¼ in. × 19 gauge	12⅜	Total per lb.	55⅜
⅜ in. × 19 „	11⅛	„ „	54
1 in. × 18 „	9⅜	„ „	52⅜
1¼ in. × 18 „	9	„ „	51⅞
1½ in. × 18 „	9	„ „	51⅞
2 in. × 17 „	10⅛	„ „	53½

		£	s.	d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras	per ton	398	0	0

Zinc

			s.	d.
Sheet Zinc 10 gauge (25 SWG) 5 cwt. lots upwards	per cwt.	8	11	6
do. 12 gauge (23 SWG)	„	8	9	9
do. 14 gauge (21 SWG)	„	8	8	9

Brass Tubes

		s.	d.
Brass tubes basic price, plus gauge and manufacturing extras	per lb.	2	9½

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties.

		£	s.	d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	143	5	0
Lead Water Pipe in coils	„	144	10	0
Lead Soil Pipe 10 ft. or over 2 in. to 4 in. dia.	„	146	0	0
do. over 4 in. dia.	„	148	0	0
Lead Gas or Untinned Compo pipe	„	146	0	0
Extras over Basis for quantities under 1 ton				
5 cwt. and under 1 ton	per cwt.		2	0
3 cwt. do. 5 cwt.	„		4	0
1 cwt. do. 3 cwt.	„		6	0

Smaller quantities than 1 cwt. priced specially.

Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.

Allowance for Old Lead, collected £99 0s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

			£	s.	d.
Coarse Pink in 1-ton loads and over Delivered on Site	per ton		7	11	9
do. White do. do.	„		7	19	6
Sirapite Coarse do. do.	„		7	14	0
do. Fine do. do.	„		8	2	0
Blue Lias Lime in 6-ton loads	„		6	14	6
Hydrated Lime do.	„		5	17	6
Lump Lime do.	„		5	7	0
White Keen's or Parian Cement in 1-ton loads	„		10	17	0
Pink Keen's or Parian Cement in 1-ton loads	„		10	11	9
Granite Chips in 6-ton loads	„		2	7	3
Hair	per cwt.		4	17	6
Gypsum Plaster Lath or Base Board ½ in. thick 600 yds. and over in one delivery. Delivered site	per yd.			2	3½
1,200 yds.	„			2	2½
Do. Insulating do. ⅜ in. thick 600 yds. and over in one delivery. Delivered site	per yd.			2	11½
1,200 yds.	„			2	10½
Gypsum Plaster Wall Boards, 3 and 4 ft. wide 6 to 12 ft., ⅜ in. thick, 600 yds. and over in one delivery. Delivered site	„			2	6½
1,200 yds.	„			2	5½
Do. Insulating do. ⅜ in. thick 600 yds. and over in one delivery. Delivered site	„			3	2½
1,200 yds.	„			3	1½

PAINT AND DISTEMPER

		£	s.	d.
Delivered London area				
Ceiling Distemper	per cwt.	1	7	6
Washable Distemper	,,	5	5	0
Gloss Paint	per gal.	2	10	0
Snowcem cement paint (in 1 cwt. drums)	per cwt.	3	11	0
LEAD PRODUCTS AND OILS				
Ground White Lead, 1 cwt. kegs	per cwt.	8	18	0
Genuine White Lead Paint, 1-19 gal. lots in 1 gal. tins	per gal.	3	2	0
Genuine Red Lead, Dry, 1 cwt. keg	per cwt.	7	2	0
Genuine Linseed Oil Putty, 1 cwt. keg	,,	2	13	0
Size XD quality, 28 lb.	per tin		9	0
Raw Linseed Oil (5 gal.) drums extra	per gal.		12	0
Boiled Linseed Oil (5 gal.) do.	,,		12	5
SUNDRIES.				
Turpentine substitute (5 gal.) drums extra	,,		5	6½
do. do. (40 gal.) do. do.	,,		4	8½
Solignum, Brown (5 gal. cans) Exterior	,,		6	10
Creosote (40 gal. barrels)	,,		2	0
Paste Powder (1 lb. packets)	per lb.		1	6
White Lining Paper	per piece		1	0

VARNISHES, etc.

		£	s.	d.
Delivered London area.				
Oak Varnish, Outside or Inside	per gal.	1	12	6
Oak Pale Copal do.	,,	1	18	0
Hard Drying Oak for Inside	,,	2	0	0
Crystal Paper Varnish do.	,,	2	0	0
Eggshell Flat Varnish do.	,,	2	14	0
Finest Carriage Varnish	,,	2	10	0
Front Door Varnish	,,	2	0	0
Japan Gold Size	,,	1	12	6
Black Japan	,,	1	14	0
Brunswick Black	,,	1	10	0
Berlin Black	,,	1	5	0
Terebene	,,	1	8	0
Knotting (1 gal, bottles free)...	,,	2	2	0
French and Brush Polish (do.)	,,	1	18	0

GLASS

Delivered London area.	Per ft. super s. d.
18 oz. Sheet Glass Ordinary Glazing Quality. Cut Sizes	5 7/8
24 oz. ,, ,, ,, ,, ,, ,,	7 7/8
26 oz. ,, ,, ,, ,, ,, ,,	10
32 oz. ,, ,, ,, ,, ,, ,,	1 1
⅛ in. Rolled Plate	9
3/16 in. and ¼ in. Rough Cast	1 0
⅛ in. Figured Rolled and Cathedral, Standard patterns: White	9
do. Standard Tints	1 4½
do. Special Tints	2 9
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating	1 1
¼ in. Wired Cast	1 2
¼ in. Georgian Wired Cast	1 2½

Hollow Glass Blocks—	Each s. d.
P.B.2 5¾ × 5¾ × 3⅞ in.	2 9
P.B.3. 7¾ × 7¾ × 3⅞ in.	4 2
P.B.32 7¾ × 7¾ × 3⅞ in.	4 2
Radiused Corner Blocks to match up with—	
P.B.2	5 3
P.B.3	6 9
P.B.32	6 9

¼ in. Polished Plate Glass, G.G. Quality—	Per ft. super s. d.
In plates not exceeding 2 ft. sup.	3 7
,, ,, ,, 5 ft. sup.	4 5
,, ,, ,, 45 ft. sup.	5 1
,, ,, ,, 100 ft. sup.	5 6
¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality —Not exceeding 135 ft. sup. or250 in. one way or 135 in. both ways	8 4
Not exceeding 180 ft. sup. or ditto	11 3
Not exceeding 200 ft. sup. or ditto	16 0
Plates exceeding 200 ft. sup., prices on application.	
Substances other than ¼ in. Polished Plate at Special Prices.	

Quantity Tariff—Sheet and Sundry Glass.

The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity	Per ft. sup. s. d.
18 oz. sheet O.Q.	3,000	4½
24 oz. ,, ,, ...	2,000	6½
26 oz. ,, ,, ...	2,000	7½
32 oz. ,, ,, ...	2,000	10½
⅛ in. Rolled Plate	1,000	7½
¼ in. Figured Rolled and Cathedral Standard Patterns, White	1,000	7½
⅛ in. Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte...	1,000	10½
3/16 in. and ¼ in. Rolled Plate or Rough Cast ...	2,000	10½
¼ in. Wired Cast, Hexagonal...	2,000	11½
¼ in. Georgian Wired Cast	2,000	1 0½

SLUM CLEARANCE

London Boroughs' Plans

From a Special Correspondent

JOINT returns dealing with the number of houses in London unfit for habitation are now being completed by the London County Council and each of the twenty-eight Metropolitan Boroughs. The returns are due to go to the Ministry of Housing at the end of this month for necessary approval. Each return will show the number of unfit houses within the meaning of Section 9 of the Housing Repairs and Rents Act, 1954, and suitable for action under Section 11 or Section 25 of the Housing Act, 1936. Slum clearance undertaken within the proposals of these returns will come under the heading of the Second 5-Year Plan, which starts in 1956 and concludes in 1960.

UNFIT HOUSES

It is estimated that between 17,000 and 20,000 houses will be shown as unfit for habitation in these returns. But of this figure many are shown as having been carried over from the first 5-Year Plan, which ends this year. The cost of acquisition and demolition of property under this plan is estimated at approximately £7,000,000, this figure being based on certain schemes approved by the London County Council. The cost of the second 5-Year Plan is also estimated at several millions, which will cover redevelopment in the areas themselves as well as the settling of dwellers outside the areas.

Since the end of the war, about 1,200 houses have been demolished as part of the post-war programme, and in addition over 3,000 houses have been pulled down which were left over from before the war, and which do not come within the first 5-Year Plan. Up to the end of March, 1955, the London County Council had declared 104 clearance areas involving the demolition of 7,024 houses and flats to the Ministry of Housing. The Ministry has, so far, confirmed 51 areas involving the demolition of 2,945 houses.

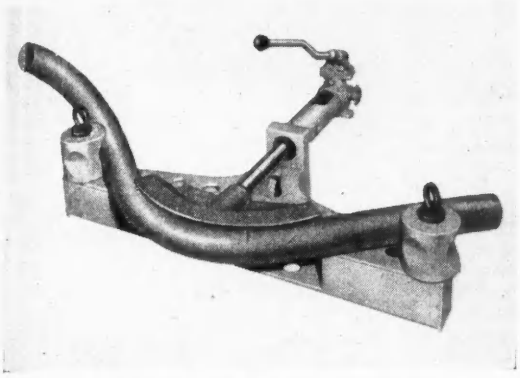
Some of the London boroughs have very little slum property to return, while others have dense areas which have been more or less condemned by the Medical Officer of Health in the borough. Some of the boroughs had interesting remarks to make when your correspondent made inquiries about the return. A spokesman of the *Bethnal Green* Council, for example, stated that about 2,500 would be shown on their return, including LCC and Borough areas. Tall blocks of flats are to be erected on the cleared areas to rehouse the people, plans for which have already been produced.

In *Poplar* the problem is not so pressing. Whilst there are a fair number of bad individual properties, the position is better than that of some neighbouring boroughs. Most of the "pocket" areas in Poplar are to be dealt with by the LCC, while the individual properties, some of which are single houses, will be dealt with by the borough council. *Bermondsey*, on the other hand, has many properties unfit for habitation. Most of the houses, according to a Bermondsey Council official, are between 80 and 100 years old. An area in Abbey-street North is to be redeveloped with flats, maisonettes and shops in accordance with designs prepared by Messrs. Clifford Culpin & Partners. The Abbey-street South area is now awaiting the result of a compulsory purchase order. Bermondsey's return will show the maximum amount of houses conforming with the Act of 1954.

WOOLWICH'S PLANS

Woolwich, which is one of the largest Metropolitan Boroughs for area, also has a number of houses unfit for habitation. An official of the Woolwich Council said that the main problem is the Glyndon-road area of Plumstead. Most of the rebuilding that will be done will be houses, as most redevelopment in Woolwich has been in the nature of houses in preference to blocks of flats. One of the largest areas near the dockyards, known as the St. Mary's area, covers 750 acres. It is hoped to build between 6,000 and 7,000 houses there during the next 10 years. By the end of 1960 a considerable number of London's slums should be removed and the inhabitants rehoused.

The Builder Review of PLANT & MATERIALS



UNRESTRICTED COLD BENDING of electrical conduits at maximum speed is claimed to be possible with the aid of a range of forming dies marketed by Chamberlain Industries, Ltd., Staffa-road, Leyton, E10, for use with their portable 3-in. open-type "Staffa" bending machine. Conduits up to 3 ins. diameter can be bent, and a two-stage action ensures that the ram speed is adjusted to the load. The unit develops an 8-ton maximum bending force.

REDUCING FIRE HAZARDS

TO show how the required standards of thermal insulation can be met while still keeping fire hazards to the minimum, the Gypsum Building Products Association have issued a technical booklet containing information on the properties and applications of Insulating Gypsum Plasterboard. This material consists of plasterboard with a veneer of thin, polished aluminium foil, and can be supplied in wallboard, lath, baseboard or plank form. Conforming to BS 1230, it is claimed to provide a reflective type of insulation when used with an air space, and when so used, to have a thermal insulating efficiency superior or equivalent to most recognised forms of sheet insulating materials. It has been given a class 1 classification as far as surface spread of flame is concerned, and although classed as combustible according to BS 476 because of its paper liner, its use is understood to be permitted in all places where incombustible materials are recommended for use in schools. The booklet, entitled "Improved Thermal Insulation with Reduced Fire Hazard," may be obtained free from the Association's member companies: Gyproc Products, Ltd.; Imperial Chemical Industries, Ltd.; Plaster Products (Greenhithe), Ltd., and the British Plaster Board (Manufacturing), Ltd.

PAINT ADDITIVE

An additive, for use with their "Coo-Fin" oil-base paints, has been marketed by W. R. Cook & Co. (Paints), Ltd., of Darwen, Lancs. Known as "Phenocet," it is claimed to be resistant to moisture and chalking, and to be capable of intermixing with all shades of "Coo-Fin" paints. One of the main advantages of this new additive is understood to be the increase in spreading capacity which it affords.

ALUMINIUM ROOFING

The application of aluminium foil as a roof capping in the varying climates of Switzerland, Thailand and Australia has been illustrated in a pamphlet published by Aluminium Union, Ltd., The Adelphi, WC2. Entitled "Aluminium Foil for Roofing," it outlines the methods of fitting and the advantages to be derived from the use of this material. Of particular interest is a photograph of the domed roof of the Boxing Stadium at Bangkok, Thailand, contained in the pamphlet.

ENGINEERING EXHIBITION

At the Engineering, Marine and Welding Exhibition due to open at Olympia, London, on September 1, the stand of Frederick Braby and Co., Ltd., 352-364, Euston-road, NW1, will show typical examples of their wide range of products, including fabricated plate and sheet metal work, perforated metals, cable trays, cable troughing, steel shelving and lockers, pressings and stampings and wire machinery guards. Other products will be illustrated by photographic display panels on the stand, which has been designed by Ronald Dickens, MBE, FSIA.

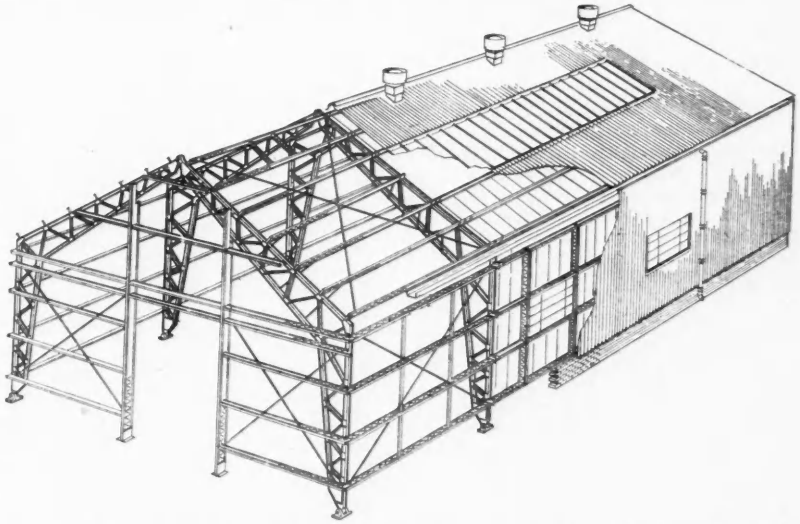
The range of diesel engines to be displayed by Crossley Brothers, Ltd., 308, Regent-street, WC1, at the same exhibition will include the 1,500 bhp "Crossley-Premier" horizontal vis-a-vis oil engine—a pressure-charged unit having an equal number of cylinders disposed on each side of a central crankshaft. Essentially of slow-speed heavy duty design, these engines have a service availability understood to attain a very high percentage of the total time, with a liner wear rate such that a running life of 100,000 to 120,000 hours is claimed to be not uncommon. Other exhibits will include a 1,380 bhp and 600 bhp power unit, as well as a 330 bhp diesel generating set.

MOBILE COMPRESSOR

The latest addition to the range of mobile air compressors made by the Hymatic Engineering Co., Ltd., of Redditch, Worcs, is the "Hydrovane 7P100," a compact mobile compressor powered by a 2-h.p. four-stroke petrol engine and displacing 7 cfm at 100 psi. This compressor can operate a full-size industrial spray gun or two internal mix guns, and is suitable for use with paints of all kinds. Small pneumatic tools can also be powered, and large wheels are fitted for use on rough or soft ground. The weight of the complete compressor is only 165 lb.

CONCRETE FIREBACK

A fireback, embodying deep, specially-shaped ridges and made of special refractory concrete has been introduced by Uwins House Warmers, Ltd., 6, Cheapside, EC2.

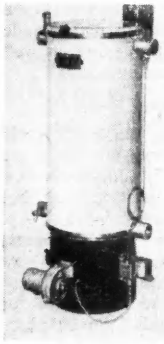


THE BASIC DESIGN of the "Metsec" building centres round prefabricated three-pin arches manufactured from cold-roll formed sections to give a high strength/weight ratio. Stiffeners are inserted in the main frame sections so that stress is constant throughout the framework members. The arches are delivered to the site in four parts, comprising two rafters and two legs, and site assembly and erection can be carried out by relatively unskilled labour without elaborate equipment. A patented system of lining and insulation is incorporated into the structural framework so that the building can be lined, insulated and sheeted by the same gang of men working from the outside of the building, obviating the need for interior scaffolding. Manufactured from "Cor-Ten" high-tensile low-alloy steel (understood to have a corrosion resistance from four to six times greater than that of normal structural steel), the buildings are erected on a concrete raft foundation and clad with any of the normal types of sheeting. Extractor ventilators and patent glazing can be supplied as required. Further details from: Metal Sections, Ltd., Oldbury, Birmingham.

and is claimed to provide greater economy in the use of fuel. The ridges protrude over the hottest part of the fire, thus arresting the upward flow of heat and causing better combustion with less smoke when lighting or refuelling. Made in four separate parts, the fireback can be adjusted to fit either 16-in. or 18-in. openings, and takes standard fire baskets in each case. It is claimed that a floor temperature of over 70 deg. F. at a distance of 8 ft. from the fire can be regularly obtained.

BOILER/BURNER UNIT

An automatic central heating and hot water boiler has been placed on the market by Perkins (CME), Ltd., Mansfield-road, Derby. It is understood that this diesel fuel boiler / burner unit has an exchange efficiency of over 80 per cent.—more than 130,000 BTUs per gallon of oil—and the makers claim that for the consumption of only 4½ pints of diesel oil, the boiler will maintain for an hour 19 separate radiators of 25 sq. ft. area each. Thermostatically controlled, this domestic model is a combined unit designed for efficient central heating, and a large oil storage tank capable of holding 650 gallons of diesel fuel can be supplied by the company for winter storage.



TRADE NEWS

ALUMINIUM NEWS

The useful series of monthly notebooks issued by the Northern Aluminium Co., Ltd., Bush House, London, WC2, is continued with one for September.

HARDBOARD ON TV

Another FIDOR-assisted television feature appeared in the "About the Home" programme on August 18. The subject—making pelmets out of hardboard—was introduced by Margaret Hood-Leeder who had constructed most of the items herself. The programme was produced by Mr. S. E. Reynolds.

FLATS AT SALFORD

The tenth issue of the "Review" published by the Trussed Concrete Steel Co., Ltd., Truscon House, Lower Marsh, SE1, contains an illustrated article describing a scheme of flats being erected for Salford City Council. Designed by the Manchester architects, Messrs. Cruickshank and Seward, this £202,900 scheme, involving the erection of an eight-storey block of 110 flats, is based upon traditional design and in situ construction. The use of certain design techniques is understood to have afforded a considerable reduction in cost per dwelling unit. Other designs for multi-storey blocks of flats, embodying new techniques, are being developed by the company with architects of certain large cities. These are principally for tower blocks on compact sites, and will be described in future numbers of the company's "Review."

NEWS IN BRIEF

BID LIST OF MEMBERS

Building Industry Distributors, 52, High Holborn, WC1, have published an addendum (No. 2) to their April, 1955, printed list of members.

LFBA LADIES' FESTIVAL

The annual Ladies' Festival of the London Builders Foremen's Association will be held on September 24, at the Connaught Rooms, WC, at 5.30 p.m. Reservations from the Social Secretary, Mr. F. J. Beach-Barnard, 188, Higham-road, Tottenham, N17.

BRS DIGEST

Building Research Station Digest No. 79 deals with the internal Corrosion of Concrete Sewer Pipes by Effluents Containing Sulphates; the treatment of walls infected with dry rot; and repairs to mastic asphalt and felt roof coverings. Copies, price 3d., from the Stationery Office.

HUMBER BRIDGE SCHEME

Further consideration is to be given to the proposed construction of a suspension bridge across the River Humber from Hessle Cliffs, Yorkshire, to north Lincolnshire. Plans were prepared for such a bridge before the war, but, restricted by Government finance, the scheme has had to be modified. Improvements in the design have been made in the light of lessons learned when the bridge over the Tacoma Narrows, Washington State, USA, was shaken to pieces during a gale, as well as from experiments in Government wind tunnels. There will be two carriageways, each 22 ft. wide with an 8 ft. footpath between, strung about 100 ft. above the Humber from two supports by some 10,000 tons of wire. One problem presented by the scheme is that at a period of industrial stringency, the bridge would absorb practically the whole output of the wire industry in the country for a year. Nevertheless, Hull Council are to go forward with the proposals, and the new bridge, it is thought, could be the centre of an alternative route to the Great North Road, relieving the traffic on the present one. The probable cost of the scheme would be about £15 m., and the bridge is expected to be about 4,500 ft. long—100 ft. longer than the proposed "World's Longest Bridge" across the Narrows to Staten Island at New York, a 220 m. dollar twelve-lane, double-decked suspension bridge described in our issue of August 19.

PLANNING APPOINTMENT

Mr. E. Rowland Voyce has been appointed senior planning officer in the Ministry of Housing and Local Government. For 10 years Mr. Voyce has been regional planning officer for the East and West Ridings region.

MODERNISED DWELLINGS

A new brochure, entitled "Houses and Flats Before and After Modernisation by Gas and Coke," has been published by the Gas Council, 1, Grosvenor-place, SW1. It describes how the gas industry can assist in the provision of comfort to homes formerly lacking such amenities. After outlining the conditions for grants under the Housing Repairs and Rents Act, 1954, and the method of obtaining them, the booklet describes the gas appliances which can be installed for cooking, the provision of hot water, home laundry, food storage and space heating. It is illustrated with plans of simple conversions and photographs showing property which has been improved in the way suggested. Copies from the Council or area Gas Boards.

IBD EXAMINATIONS

The Incorporated Institute of British Decorators and Interior Designers have announced the results of their Associateship Examinations, 1955. The following passed—*Preliminary Grade:* Peter Fisher, Derby (Derby College of Art); James Rimmer, Southport (Southport School of Arts and Crafts). *Intermediate Grade:* Miss P. A. Taylor, Nottingham (Nottingham College of Art and Crafts); James E. Todman, Rochester (Medway College of Art); Jack Harrop, Dewsbury (Dewsbury and Batley Technical and Art College); F. P. James, London (Northern Polytechnic); J. H. Woods, Glasgow (Stow College of Building and Allied Trades). In addition, the following were successful in passing the Northern Polytechnic Internal Examination: Miss R. E. Huxley, London (Northern Polytechnic); Miss V. A. Plant, London (Northern Polytechnic). There was no award of the "F. Dakin Scholarship." *Final Grade:* Craftsman Section, Arthur Whittle, Bexley (LCC Brixton School of Building). Interior Designer Section, W. G. Mitchell, London (Royal College of Art, South Kensington). There was no award of the Institute prize for excellence of work submitted for the Final Grade.

The Institute have also announced that Mr. C. W. Allen has been appointed secretary in succession to Mr. W. C. C. Smith, FRSA, who has retired from the post.

PERSONAL COLUMN

MR. W. D. ORWIN has been elected to the board of Mills Scaffold Co., Ltd.

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OVERSEAS BUILDING

[From Our Own Correspondents]

AUSTRALIA.—Chrysler (Australia), Ltd., a subsidiary of the American car and truck manufacturing company, is to increase its plant facilities in Australia. Next year the company will begin a £A500,000 building programme near Adelaide, to provide a complete range of design and test facilities for the company's full range of cars.

Tenders are shortly to be called for construction, near Sydney, of the research laboratories, buildings and services for Australia's first atomic reactor. The Australian Atomic Energy Commission have announced that work on the buildings will start by about October. The reactor and its associated buildings will cost about £A5,500,000 and will be built at Lucas Heights, near Menai, a small township just south of Sydney. Work on the buildings will be dovetailed with work in Britain on the reactor core. It is expected that the reactor will be ready by the middle of 1957.

GREECE.—A recent agreement signed between the Greek Government and the Greek Chemical Products and Fertilisers Company owned by a Mr. Bodassakis, stipulates the erection of a briquette factory with an annual capacity of over 200,000 tons, mainly for the State Railways, and the construction of a semi-coke plant to produce 100,000 tons a year for metallurgical uses. The mines nearby will supply lignite for the 65,000 kw. thermal power station to be erected by the Public Power Corporation in the area. The project is to be financed with £1m., approximately, supplied by the concessionaires, just over that amount from German credits, and about £5m. borrowed from the Economic Development Finance Corporation.

The Minister of Communications and Public Works, Mr. Constantine Caramanlis, announced in Athens recently that 10,000 houses are to be provided in the building programme of the next 12 months in the Ionian Islands. The French Government has allocated about £300,000 for the rebuilding of the communities of Aghia, Euphemia, and Lakythia.

GUATEMALA.—A loan of $18.2 million was approved recently by the International Bank to help the Guatemalan road construction programme. For a start, the Government has engaged Messrs. Tippetts-Abbett-McCarthy-Stratton, a US firm, to act as consulting engineers for the planning, design and supervision of the execution of the two highways involved under the International Bank loan scheme. The scheme entails completion of a 300 km. highway between Guatemala City and Puerto Barrios and Santo Tomas; the construction of 135 km. of highways to complete the Pacific Highway from the Mexican to the Salvadorean borders. Workshops and maintenance depots are also to be established. British firms might be able to get contracts for materials and machinery as all offers here will be carefully studied.

The port of Champerico which was recently purchased from the USA by the Guatemalan Government is to be rehabilitated; much construction work is envisaged.

INDIA.—Indian State industries are to set up three more fertiliser plants during the second Five-Year Plan. This is one of many schemes to be undertaken by the Indian Government to enable it to carry out its responsibilities in that part of industry and trade which has been taken over by the State from private enterprise. Establishment of the new factories is likely to cost Rs. 640 million.

Other important buildings to be constructed include a second DDT factory, a factory to manufacture heavy electrical equipment, and a plant to produce synthetic oil from low-grade coal. It is also proposed to expand the production of telephone cables by the construction of more factories. A committee of technical experts headed by the Chief Industrial Adviser to the Indian Government has been set up to consider proposals from foreign firms regarding plans to put up a fertiliser plant in the Bhakra-Nangal area. The new factory will be designed to produce 200,000 tons of ammonium nitrate a year.

Under an agreement signed between the US Government and the Government of India recently in Delhi, the United States will contribute an additional 680,000 dollars towards aid for 250 new community development blocks which will be taken in hand by the end of the first Five-Year Plan This brings the US assistance in this respect to a little over 14 million dollars. Under several other agreements signed recently the US is to give India financial assistance for other projects not mentioned in detail. These include education and research units, mining development, and the extension of agricultural buildings and institutions.

Large road-building schemes are to be authorised in Vindhya Pradesh, one of India's comparatively less developed States. More than Rs. 62 million are to be spent on metalled roads to link 12,000 villages. The scheme also provides for improving 175 miles of existing metalled roads. About 900 miles of fair-weather roads will be converted into all-purpose roads and 1,770 miles of new roads will be built. Besides, the State Government proposes to build 38 major and 120 minor bridges and 32 rest houses for those using the highways. There is ample scope here for British contractors.

NORTHERN RHODESIA.—The 690-foot long suspension footbridge over the Zambesi at Kariba Gorge will be built by Dorman Long and Co. The contract was awarded by the Federal Hydro-Electric Board. Three other tenders had been submitted. The bridge, which will be built of steel girders, will be less than half a mile below the dam. Eventually, a cable railway will be built across the river to carry cement and other heavy building materials. . . . The biggest local loan raised in the Federation will be floated shortly. It is for £7,000,000 and will be used to finance the Federal and Territorial Government's development programmes.

**SOUTH AFRICA.*—Workshop equipment is required for the Department of Defence. The items required include: electric drills, grinders, circular saw, pipe bender, guillotine, bending roller, portable sanders, bar cropper, wood turning lathe. Bids should be sent to the chairman, Union Tender and Supplies Board, 291, Bosman-street, P.O. Box 371, Pretoria. Closing date, September 8. Telephone inquiries to Chancery 4411, ext. 738 or 771, quoting reference ESB/17429/55.

**USA.*—The British Consulate-General, Houston, Texas, has announced that the US Army Corps of Engineers, Fort Worth, proposes to commence construction before June 30, 1956, of the Magee Bend Dam at an estimated cost of 50m. dollars. The Dam which is to be built across the Angelina River, approximately 45 miles South-east of Lufkin in the State of Texas, is expected to form an artificial lake 40 miles long and is to provide for flood control, water conservation and hydro-electric power. No further details are available at present. Telephone inquiries to Chancery 4411, ext. 738 or 771, quoting reference ESB/16892/55.

**USA.*—The J. S. Norman Building Co., 8400 Long Point-road, Houston 24, Texas, have informed the British Consulate-General at Houston that they require a source of supply in the UK of wood fibre board in connection with the construction of a new shopping centre at Bingle-road, Houston. The material, which is required urgently, is specified as follows: Wood fibre board, asphalt impregnated, in pieces 4 ft. by 8 ft. and ½ in. thick. The Houston firm would import on their own account, the terms of payment to be arranged. Suppliers interested in this inquiry should write by air mail direct to the US firm with quotations in US dollars cif Houston. Telephone inquiries to Chancery 4411, ext. 776, quoting reference ESB/17570/55.

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TRINIDAD TRADE FAIR

*The Trinidad Trade Fair will be held this year from September 30 to October 16. The organiser of the Fair, Mr. Conrad Gonzalez, arranged a similar show in 1954 which proved highly successful and attracted more than 122,000 visitors to Port of Spain.

In response to a large number of inquiries from overseas exhibitors the organiser has decided this year to build a special "Overseas Exhibit" stand which will be attractively decorated and illuminated.

Inquiries about the Fair should be addressed to the Exhibitions and Fairs branch, Board of Trade, Lacon House, Theobalds-road, WC1. Telephone: Chancery 4411, extension 421, quoting reference E & F 442/54.

* From the Board of Trade Special Register Information Service.

The SCOTTISH BUILDER

Redevelopment in Glasgow

FURTHER moves in Glasgow's redevelopment plan for the congested South Side area of the city were made on August 17. It covers Hutchesontown and part of Gorbals, where there are 27,000 people in 7,605 houses. The area extends to 112 acres. A sub-committee of the Corporation discussed the effect of the changes on industries, shops, etc., in the district. No decisions were taken but it was generally agreed that a proportion of these would return after the area was redeveloped.

Under the present proposals, most of the industries would have to leave, though provision had been made for some of them to be relocated in the area. Others might be offered alternative sites which the Corporation owned in other parts of the city. It was thought, however, that heavy industries would be excluded.

The plan affected 440 shops and a number of small industrial concerns. A spokesman said that a number of the houses in the area were sub-standard. The first section of the plan to be undertaken would take about five years, and would involve 1,963 houses.

Primary Schools Planned

PLANS to build eight new two-stream primary schools in Glasgow were approved by the Education Committee on August 19.

It is understood that contractors have been urged to proceed without delay on all schools under construction. An economy "cut" might be enforced, and the committee would like the work to be done at the earliest possible moment.

It was agreed to ask the Housing Committee to transfer to the Education Department about 40 acres of ground at Hillpark, which was suitable for a secondary school and a primary school among other buildings.

Turriff Housing Experiment

WORK will start soon on the experiment being conducted by Turriff Town Council to see how best the Council housing schemes can tone in with the local red sandstone and generally give a brighter appearance to the housing estate. Two blocks have been selected, one to be treated with a special pinkish-brown spray, the other with a cornhusk colour spray. Council officials will study how they stand up to the winter climate, and if successful results are obtained a general scheme of brightening will be considered.

Air Pollution

WIDER investigation of atmospheric pollution is contemplated by Lanark County Council, who are proposing to establish seven observation stations at Carfin, Bellshill, Baillieston, Carmyle, Cambuslang, Blantyre, and Hawkshead or Boghead.

Building To Be Preserved

AN APPEAL by the artists of Kirkcudbright for the preservation of a condemned building at Castlebank has been upheld by the National Trust for Scotland. The building, which is 200 years old, will be preserved as a gallery for the works of local artists if sufficient funds are raised within six months.

Kyle Telephone Exchange

THE GENERAL POST OFFICE has erected a new landmark on the "Road to the Isles." It is the modern telephone exchange at Kyle of Lochalsh, Converted from a semi-derelict WRNS hostel, it occupies a prominent position on a wooded escarpment overlooking Kyleakin Sound, where thousands of summer visitors cross daily to and from Skye. Its gleaming white walls, visible for miles, make it an outstanding feature of Kyle village.

Lanarkshire Fire Brigade HQ

AN outstanding addition to Scottish fire-fighting facilities, the future headquarters of the Lanarkshire Fire Brigade, was opened on August 6. Located at Bothwell-road, Hamilton, the station is an interesting example of current design in this specialised field.

Plans have been prepared to improve fire-fighting facilities both in established areas and in newer areas, to adapt old stations and build new. Sites for new fire stations have been purchased in various parts of the brigade areas and existing buildings have been adapted to provide good accommodation as temporary fire stations. This policy has been adopted at Shotts, Stepps, Douglas, Lesmahagow and Bishopbriggs.

Existing stations in other centres have been improved and plans for new stations are now prepared and work of erection ready to commence in Hamilton, Biggar, Coatbridge, Lanark, Abington, Strathaven, Bishopbriggs and East Kilbride.

NEW BUILDINGS

Airdrie.—Lanarkshire CC has had plans approved for new Catholic School at Thrushbush-rd. Architect: William R. Watt (F), Education Offices, Albert-st., Motherwell-Wishaw.

Argyllshire.—Plans in hand for municipal offices. Council Architect, David M. Kellock, FRIBA, Master of Works Offices, Campbeltown.

Banffshire.—Plans are in the hands of the North-East of Scotland Fire Area Joint Board for new fire station to be erected at Newlands-la. site, Buckie.

Edinburgh.—Plans in hand for automatic telephone exchange, estimated to cost £67,000, to be erected at Russell-rd., Westend, these being by MOW Architectural Department, London.

Glasgow.—Plans for Nineteen Forty Seven, Ltd., 58, Haymarket, W1, have passed the Dean of Guild Court for additions and alterations, etc., at Gordon-st.-bldgs. Architects, Leslie & Norton, 4, St. George-st., W1.—Plans for Macandrew, Wermald & Co., Ltd., for extensions to their paint works and new storage building have passed the Dean of Guild Court. Architect, John L. Edgar, FRIBA, 96, Camphill-ave., Langside, Glasgow, S1.—Plans for Durable Tools, Ltd., Avenuepark, have passed the Dean of Guild Court for additions and alterations, etc., to their factory at 61 to 69, Avenuepark-st., Maryhill-rd., Glasgow, NW.

Glasgow.—Plans prepared for William Macewan & Co., Ltd., Fountainbridge, and Port Dundas Brewery for additions at Milton-st. and Port Dundas-rd., Cowcaddens. Architects, Watson, Salmond & Gray, F.ARIBA, Central Station-bldgs., Union-st., Glasgow, C2.—Plans for the Catholic Archdiocese of Glasgow's new church buildings have been approved by Dean of Guild Court and will be erected at Baldwin-ave., Knightswood. Architects, Pidgin & Pidgin, FRIBA, 11, Old Hall-st., Liverpool, 3.—Plans prepared for James Crawford & Sons, Ltd., Woodside-terr., for machine shop buildings to be erected at Crow-rd., Partick, architects being Gratton & Maclean, F.FRIBA, 21, Woodside-terr., Woodlands-rd., Charing Cross, Glasgow, C3.—Plans prepared for Marks & Spencer, Ltd., Michael House, Baker-st., London, for Sauchiehall-st. scheme of additions, etc. Architects, James M. Monro & Son, F.ARIBA, 25, Woodside-pl., Woodlands-rd., Charing Cross, Glasgow, C3.

Glasgow.—Plans have been prepared by their own architects for new motor showrooms and commercial garage at 63 to 76, Janes-st., Bridgeton, for John Mitchell & Sons (Greenock), Ltd., The Globe Motor Garage, Grey-pl., Greenock.

Glasgow.—Plans are in hand for extensions, additions and alterations to buildings for Messrs. Malcolm Paterson at Royston-rd. Architects: Weddle & Thomson (F&A), 216, Bath-st., Blythswood, Glasgow.

Glasgow.—Plans prepared by their own staff of designers have been approved for new buildings at Shieldhall-rd. and at Drumoyne-rd., for the Greengate and Irwell Rubber Co., Ltd., Ordsall-la., Salford, Lancashire.

Glasgow.—Plans have been prepared for Bremner & Co., Ltd., warehousemen, for additions and alterations to their premises at 12 to 44, Glassford-st., City. Architects: Whyte & Nicol (F&A), 31, North Frederick-st., George-sq., Glasgow.

Glasgow.—Plans have been approved for Gilmour & Dean, Ltd., for additions, alterations, etc., at Fordneuk-st., Bridgeton, and for reconstruction and additions scheme for Federated Paints, Ltd., at Dobbies Loan, Townhead. Architects: Frank Burnet, Boston, & Bell (F&A), 180, Hope-st., Glasgow.

Glasgow.—Plans have been approved for L. Sterne & Co., Ltd., refrigeration engineers, for additions and alterations, etc., at 138 to 160, North Woodside-rd., Cowcaddens. Architects: James Findlay & Son, 12, Otago-st., Hillhead, Glasgow.

Inverness.—Plans in hand for the Church of Scotland Inverness Presbytery for parish church halls to be erected at a county site at Milton, for which the architects and quantity surveyors are Alexander Ross & Son, J. Alistair Ross & William W. Mitchell, FRIBA, FRIAS, MIStructE, Queensgate-chbrs., and William M. Souter & Jaffray, F.FSI, 11, The Queensgate, Inverness.

Lanarkshire.—Plans prepared and approved for extensions at Union-st., Larkhall, for which the architect is Robert Milligan, 3, Summerfield-ave., Larkhall.—Plans approved for Scottish Industrial Estates, Ltd., Glasgow, for block of buildings which are to be erected at Thornliebank estate, architects being Watson, Salmond & Gray, F.ARIBA, Central Station-bldgs., Union-st., Glasgow, C2.—Plans prepared for William Alexander, 35, Campbell-st., Hamilton, for filling station and hostel, etc., to be constructed at Carlisle-rd., Abington, the architects being Alexander Cullen & Ptnrs., FRIBA, 92, Cadzow-st., The Cross, Hamilton.—Plans prepared by their own staff architects for offices at Downiebrae-

SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from April 18, 1955. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen, 4s.; Labourers, 3s. 5½d.

For apprentices, the rates are:

Year.	Percentage of Craftsman's rate.	For week of 44 hours. s. d.
1st	25	44 0
2nd	33⅓	58 8
3rd	50	88 0
4th	66⅔	117 4
5th	75	132 0

For female labour, the rates are:

	s. d.
Operatives on craft operations (at end of probationary period)	3 5½
Operatives on labouring operations (at end of probationary period)	3 2

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rd., Burnside, Rutherglen, for the River Bolt & Nut Co., Ltd., 74, York-st., Anderston, Glasgow, C2.—Plans prepared and approved for boiler house, storage buildings, etc., for Alexander Mason & Sons, Ltd., to be erected at Biggar-rd., Newarthill. Architect, David S. Court, 230, Main-st., Motherwell-Wishaw.

Lanarkshire.—Plans have been approved for new commercial garage, new office buildings, granary, etc., for Messrs. Galloway, Macleod & Co., Ltd., The Cross, Stonehouse, at King-st., Stonehouse. Architects: Gavin Paterson and Son (F&A), 6, Cadzow-st., The Cross, Hamilton.

Perth.—Housing Com. has approved plans for 100 houses on selected site, for which the architect is J. Austin Bent, ARIBA, 15, Palmerston-pl., Westend, Edinburgh.

Stirling.—Plans approved by Dean of Guild Court for 33 houses on a Stirlingshire site at the Raplock housing development. Council Architect, William M. Gillespie, FRIBA, Planning and Architectural Department, Abbey-close, Stirling.

The Builder

FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

AUGUST 29.

***†Somerset CC.**—Fire brigade headquarters, Weston-super-Mare. County A, Park-st., Taunton. Dep. £2 2s.

AUGUST 31.

***†Birmingham City C.**—Four shops and flats, Adams Hill, Bartley Green. City A. Dep. £2 2s. Tenders by September 30.

***†Leeds Reg. Hospital Board.**—Alterations, Keighley and District Victoria Hospital, Keighley. R. H. Pickles (A), 3, Wards End, Halifax. Dep. £2 2s.

***†Salford TC.**—Erection of St. Albert's RC secondary mod. school. J. C. Prestwich & Sons, architects, Bradshawgate-chbrs., Leigh. Dep. £3 3s.

***†Southall BC and Hayes and Harlington UDC.**—17 houses and 42 flats, Willow Tree estate. BE, Southall.

SEPTEMBER 2.

***Blackburn CBC.**—Temporary hutted buildings, St. Peter's Sec. Sch. and Crosshill Sec. Sch. BE. Dep. £2 2s. each.

SEPTEMBER 5.

***Coventry Corp.**—74 houses. A. H. Gardner & Ptnrs., architects, 11, Eaton-rd. Dep. £3 3s.

***†Durham CC.**—Additional accommodation at Hartlepool Throston Cty. Sch.; layout of playing fields and formation of athletics facilities at Billingham College of FE. County A, South-st. Tenders by September 19.

***†Essex CC.**—Erection of Torells Cty. Sec. Girls' Sch., Little Thurrock. County A, Chelmsford.

***†Littlehampton UDC.**—Erection of promenade trading kiosk and shelter. E&S. Dep. £3.

SEPTEMBER 6.

***†Wakefield TC.**—12 flats at Sun-la. City E, Town Hall.

SEPTEMBER 8.

***Glasgow Corpn.**—42 houses, Mosesfield-st. A and Planning Dept., 20, Trongate, C1.

SEPTEMBER 9.

***Crawley Development Corpn.**—801 dwellings, Tilgate, Stage I. Chief A, Broadfield.

***Leatherhead UDC.**—15 dwellings, Great Bookham. E&S. Dep. £2 2s.

SEPTEMBER 10.

***†Beds CC.**—Alterations and extensions to fire station, Potton. County A, Bedford.

***†Bristol City C.**—Piled foundations, pile caps, wall beams and ties for Deanery-rd. project. City A. Dep. £2 2s.

***†Portsmouth City C.**—Home for 35 aged persons, Stone-st., Southsea. City A, 1, Western-par. Dep. £1.

SEPTEMBER 12.

Berwick-upon-Tweed BC.—Six houses at Forge Cottages site, Spittal. BS. Dep. £3 3s.

Brecknock RDC.—Erection of council chamber and office extension at present council offices. J. Merton Jones & Son, St. Mary's-chbrs., Abergavenny. Dep. £3 3s.

***Middlesbrough CBC.**—Erection of block of 13 shops and 18 flats at Park End. BE. Dep. £2 2s.

***Preston CBC.**—Disabled persons centre, Deepdale. BE&S. Dep. £2 2s.

***†St. Helens EC.**—Erection of Carr Mill Cty. Prim. Jun. Sch. Director of Education.

***Seaton UDC.**—18 flats, Manor-rd. A. Lamb (A), 2, Prospect-pl., Ottery St. Mary, Devon. Dep. £3 3s.

***Southborough UDC.**—Eight flats and 3 garages, Powder Mill-la. site. Howes & Jackman, architects, 1, Verulam-bldgs., Gray's Inn, WC1. Dep. £2 2s.

***Stockport Corpn.**—Children's home, Dawlish-ave., Brunnington. BS. Dep. £2 2s.

SEPTEMBER 14.

***Bournemouth CBC.**—Extension, Pelhams community centre, Millhams-rd., Kinson. Boro' A (Room 106), Town Hall. Dep. £2 2s.

SEPTEMBER 15.

***Welton RDC.**—Two houses with site works, etc., at Nettleham. Wm. Saunders & Ptnrs., 24, Castlegate, Newark, or 14, Mercer-row, Louth. Dep. £3 3s.

SEPTEMBER 16.

***Southend-on-Sea CBC.**—Refreshment pavilion at Shoebury Common, Shoeburyness. Boro' A, 30, Alexandra-st. Dep. £2 2s.

SEPTEMBER 17.

***Wellingborough UDC.**—50 houses, Northampton-rd. estate. E&S. Dep. £2 2s.

SEPTEMBER 19.

***†Anglesey EC.**—New county primary school, Llanfawr, Holyhead. County A, Llangefni. Dep. £3 3s.

***Nonsuch Park Jt. Management Com.**—Conversion of part of Mansion House into three flats. Norman Auty, S, Town Hall, Epsom. Dep. £3 3s.

***St. Helens CBC.**—61 dwellings, Hayes-st. site, Thatto Heath. M. Ward, BE. Dep. £2 2s.

SEPTEMBER 20.

***†Carlisle City.**—108 houses and 42 aged persons' flats and bungalows, Morton-rd., and 4 shops and flats, Harraby. City S, 18, Fisher-st.

***Guildford BC.**—16 pairs houses, Park Barn. BE&S. Dep. £2 2s.

***Keynsham UDC.**—120 dwellings, Park West estate. E&S. Dep. £2 2s.

SEPTEMBER 21.

***Cannock UDC.**—Central library. H. Wilcox (A), High Green. Dep. £2 2s. Tenders by October 22.

***Coventry City C.**—22 bungalows, Henley Green estate. C. F. Redgrave & Ptnrs., architects, 6, The Quadrant.

SEPTEMBER 27.

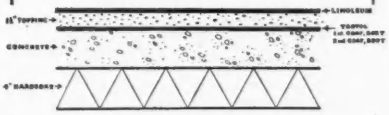
***Ilford BC.** — Demolition of existing pumping station and small adjacent baths building and the erection of reinf. concrete and brickwork pumping station (value of contract approx. £100,000). BE&S, Town Hall. Dep. £2 2s.

NO DATE.

***Midhurst RDC.**—18 dwellings, Terwick, and 16 dwellings, Rogate. T. Greenfield (F), "Newstead," Midhurst. Dep. £1 1s.

***North East Met. Reg. Hospital Board.**—New casualty dept., North Middlesex Hospital, Silver-st., N18. Secretary, 11a, Portland-pl., W1.

Cold-Applied Bitumen Damp-Proof Membranes



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PAINTING, MATERIALS, ETC.

AUGUST 31.

***†Southampton CBC.**—Internal redecorations and extensions, Sholing junior school. Boro' A. Dep. £1. Tenders by September 26.

SEPTEMBER 1.

***†Southampton CBC.**—Internal redecorations and minor repairs, Woolston RC school. Boro' A. Dep. £1. Tenders by September 26.

SEPTEMBER 8.

***Leeds City C.**—Exterior painting, Civic Hall. Director of Works, Sweet-st., Leeds 11.

SEPTEMBER 16.

***Sunderland CBC.**—Electrical installation, Health Centre, Springwell-rd. Boro' A, Grange House, Stockton-rd. Dep. £2 2s.

***Sunderland CBC.**—Roofing, Castle View primary junior schools. Boro' A. Dep. £2 2s.

SEPTEMBER 17.

***Havant and Waterloo UDC.**—Stripping and re-slating of roofs to four pairs of houses at Elm-gr E&S, Council Offices, Havant.

MUNICIPAL AND CIVIL ENGINEERING WORKS, ETC.

AUGUST 29.

Wantage UDC.—Repairs and improvements to Charlton-rd., Wallingford-st. and Mill-st. S to the Council.

SEPTEMBER 12.

Berwick-upon-Tweed BC.—Site clearance, roads and sewers at Spittal Hall housing estate, Spittal. BS. Dep. £3 3s.

Erpingham RDC.—About 20 miles of water main at Metton. J. C. Mellis & Co., E, 110, Horseferry-rd., SW1. Dep. £2 2s.

Manchester TC.—Construction of Western-rd., Wythenshawe. City S, Town Hall, Manchester 2.

Salisbury and Wilton RDC.—About 4 miles of mains at Great Wishford and South Newton. Lemon & Blizard, consulting E, Castle-la., Southampton. Dep. £3 3s.

SEPTEMBER 14.

Herts CC.—By-pass road at Markyate. County S, Hertford.

Stoke-on-Trent City C.—Reconstruction of bridge at City-rd., Fenton, over Trent and Mersey canal. City E. Dep. £5.

SEPTEMBER 15.

Ramsgate BC.—Demolition of old town hall buildings, etc. Boro' E. Dep. £2 2s.

SEPTEMBER 16.

Keighley BC.—Superstructure of Morton-la. swing bridge. E&S, College-st., Keighley. Dep. £2 2s.

SEPTEMBER 20.

Yeovil BC.—Sewage purification works, Pen Mill. J. D. & D. M. Watson, consulting E, 18, Queen Anne's-gate, SW1. Dep. £5 5s.

SEPTEMBER 23.

Ogwen RDC.—Penrhos sewerage scheme. A. H. S. Waters & Ptnrs., consulting E, 25, Temple-row, Birmingham 2. Dep. £5 5s.

SEPTEMBER 26.

***Cuckfield RDC.**—Footways and preparation of margins, etc., Hassocks. E&S. Dep. £2 2s.

Warwickshire CC.—Construction of Fenny Compton canal bridge on Oxford Canal on A423. Also reconstruction of Coton Bridge over River Tame. County S, Warwick. Dep. £5 each contract.

SEPTEMBER 27.

Hastings CBC.—Roads and sewers at Down Farm housing scheme. BE. Dep. £2 2s.

OCTOBER 7.

Liskeard RDC.—Regional water supply, contract No. 6, including three reservoirs of 200,000 galls., 100,000 galls. and 7,000 galls. capacity. G. H. Ivory & Ptnrs., consulting E, 24, Athenæum-st., Plymouth. Dep. £5 5s.

NOVEMBER 30.

†Federation of Rhodesia and Nyasaland.—Civil engineering work for Kariba hydro-electric scheme on Zambezi River. Sir Alexander Gibb & Ptnrs., civil E, Queen Anne's Lodge, SW1.

GENERAL BUILDING WORK (LONDON)

Elm Park.—CHURCH.—The erection of a church and dwelling house at Langdale-gdns., has been proposed by the Trustees for the Roman Catholic Diocese of Brentwood.

Holborn.—CENTRAL LIBRARY.—MH&LG has given approval in principle to BC's proposals to provide a new central library in Theobald's-rd. The plans, prepared by Boro' A, provide for a basement, ground floor with three floors over, and a caretaker's flat on the top floor. The estimated cost of the scheme is £200,000.

Hornchurch.—FACTORY.—TP consent given by Hornchurch UDC to proposals by Royce Engineering Co., Ltd., for the erection of a factory for light engineering purposes at Avenue Works, Southend Arterial-rd., A127.

Hornchurch.—OFFICES.—Proposals by Roneo, Ltd., Roneo Works, Hornchurch-rd., for the erection of an 11,700-ft. super office block at their premises have been given by-law approval.—TP permission has been given to the company's proposals for the erection of a 4,500 sq. ft. garage for commercial vehicles at their premises.

Ilford.—LICENSED PREMISES.—TP Com. has granted planning permission to proposals by Charrington & Co., Ltd., for the erection of licensed premises at Manford Way.

Leatherhead.—DEVELOPMENT.—BC propose to build 26 new homes on clearance areas in Leatherhead-rd., Gt. Bookham.

Rainham.—SHOPS AND OFFICES.—Proposals have been made by S. B. Budge & Co., builders, 478, Barking-rd., E13, for the erection of shops, workshops and office accommodation over on a site in New-rd., A13, at the corner of Spencer-rd.

St. Marylebone.—ROMAN CATHOLIC CHURCH.—Plans are to be prepared by H. S. Goodhart-Rendel, FRIBA, Kirkland House, 22, Whitehall, SW1, for a new Roman Catholic church providing for seating for 1,000 people. It is to be built on the site of the present St. Marylebone and Paddington employment exchange, near the Edgware-rd. end of Marylebone-rd. It will take the place of the existing Rosary Church next to the site, and building is expected to start in two years' time, when the Ministry of Labour are scheduled to vacate the site.

Southwark. — SCHOOLS PROGRAMME. — Southwark diocese, which has more than 300 church schools, is to spend more than £1m. on new school buildings in the next few years.

Strand.—OFFICE PREMISES.—Plans for an additional storey on the roof of Strand House, WC2, head offices of W. H. Smith & Son, Ltd., are now well advanced. Quantities will soon be prepared by Thurgood, Son and Chidgey, surveyors, 2, Broad Street Buildings, EC2, and the architectural section of the Estate Department of W. H. Smith & Son, under H. F. Bailey, LRIBA, are responsible for the planning and erection. The contract has not yet been let.

Upminster.—DWELLING HOUSES.—The erection of 21 dwelling houses and garages on sites in Forth-rd. and Humber-dr. has been proposed by J. E. Rogerson (Public Works Contractors), Ltd., and Hornchurch UDC have given by-law approval.

Upminster.—HOUSES.—Amended proposals by Maylands Green Estate Co., Ltd., for the erection of 112 dwelling houses in Dart-cl., Fleet-ave., and Fleet-cl. have been given TP consent by Hornchurch UDC.

Upminster.—HOUSES.—By-law approval given by Hornchurch UDC to proposals by Upminster Estates, Ltd., for the erection of eight houses on the sites of Nos. 30-44, Marlborough-gdns.

(PROVINCIAL)

Aireborough.—UDC S preparing plans for erection of council chamber at Micklefield House, Rawdon.—Approved plans: Layout of roads, sewers and details of houses at Westfield-dr. for H. Hill; office and warehouse at Whitecross, Guiseley, for H. & O. Greenwood, Ltd.

Bedford.—Three blocks of flats, 10 or 11 storeys high, to be built in Bedford, south of River Ouse. Altogether 150 flats of either one or two rooms will be provided, designed so as to get sunlight for maximum periods possible. Garages will also be built for residents. Members of Hsg. Com. visited Birmingham and Coventry to see similar development schemes. Work on site already started.

Bedlington (Northumberland).—Quantities being prepared for hotel for Newcastle Breweries, Ltd. Marshall & Tweedy, Grainger House, Blackett-st., Newcastle-on-Tyne (A).

Belfast.—J. C. Cars, Ltd., to vacate their Castle-st. premises at early date, in order that site might be prepared for erection of super cinema for Odeon Theatres, Ltd.

Bishop Auckland.—UDC to erect six shops and three flats in Proudfoot-dr., and 130 houses on Woodhouse-cl. estate. Plans by S. J. Ford.

Blyth (Northumberland).—Plans for construction of £15,000 garage at Blyth Links for G. W. Wells, proprietor of filling station at Blyth Links, been approved by Cty. Plan. Auth.

Brighton.—Corpn. approved plans submitted by Kemp Town Brewery, Ltd., for erection of licensed premises with living accommodation at junction of Cowley-dr. and Green-la.

Chadderton.—Ministry allowed appeals by T. Partington and Trustees of late E. B. Lees for erection of 80 houses opposite Springbank, Broadway.

Chatham.—Estimated cost of proposed new secondary boys' school at Walderslade will be £168,000. Construction is to start this year.

Chesterfield.—RDC propose erection of bungalows between Sycamore-st. and Springwood-st., Temple Normanton.—Approved plans for erection of PH to be known as "The Anvil" at Blacksmiths-la., Calow, for Scarsdale Brewery Co., Ltd., and conversion of Georgian residence known as "Somerset House," Chesterfield-rd., Calow, into licensed premises for William Stones, Ltd.; new factory at High-st., Hackenthorpe, for British Furtex, Ltd., £100,000 est.; 10 houses at Station New-rd. and Nethermoor-rd., Tupton, for J. Adlington, Ltd.; outline plan for development of land at Williamthorpe-rd., North Wingfield, for housing purposes for Hardys Kimberley Brewery, Ltd.

Clitheroe.—PC Council to convert Allevs Chapel to form Lady Chapel. A, Professor A. E. Richardson, FSA, FRIBA, 24, Queen Anne-st., W1.

Coventry.—TC approved large new licensed premises at Trinity-st. for Robinson, Osborne & Moules, Ltd., 16, Warwick-row, Coventry. A, B. Reyner, 5, Manor-rd., Coventry.—Wilsons Estates, Ltd., Coventry, propose erection of 18 houses and 2 shops at London-rd.

Cumberland.—CC approved in principle £52,000 coast protection scheme at St. Bees.—EC to carry out following proposals: New sec. school at Alston, £106,550; new sec. mod. school at Cockermouth, £168,712; additions to Workington College of FE, £109,165; additions to Thursby School, £10,212; additions to Silloth Mixed School, £10,000.—County A to prepare plans for nurses' houses at Hayton, Lamplugh, Langwathby/Skirwith, Seascale and Bootle.—Home for old people proposed by CC at Workington.

Darlaston.—UDC propose modernisation of town hall, £26,000 est.

Darlington (Durham).—40 houses Springfield estate, 114 houses Branksome estate. Boro' A, E. A. Tornbohm (A).

Doncaster.—BC approved erection of central vehicle maintenance workshop and garage at North Bridge.

Dublin.—Corporation propose to build municipal buildings along Wood-quay, between Fishamble- and Winetavern-st. Work on first portion expected to start in about three months. Site already being cleared. Stage 1 will be completed in about two years' time, when rest of building will be commenced. Scheme expected to be finished in about 20 years and will include Corporation staff and official accommodation and Council chamber.

Durham.—MH and LG approved plans of Durham Cty. Water Board for development of Auton Stile depot to provide garage and maintenance accommodation for vehicles and constructional plant.

Durham.—Plans being prepared by G. T. Brown and Son, Barclays Bank-chbrs., Fawcett-st., Sunderland, for 24 houses at Witton Gilbert for North-East Licensed Victuallers' Assoc.

Felling (Durham).—Plans submitted to UDC for cinema in Leam-la. for A. Woolf, Newcastle-on-Tyne. Stephenson & Gillis, Saville-chbrs., North-st., Newcastle-on-Tyne (A).

Felling (Co. Durham).—Fennell and Co., Bridge End-chbrs., Chester-le-Street, A for proposed Methodist Church on Ellen Wilkinson estate.—Plans being prepared by R. T. James and Ptnrs., Clavering-pl., Newcastle-on-Tyne, for offices at Bill Quay Shipyard of R. B. Harrison and Sons.—Quantities being prepared for proposed three-storey flats on Leam-la. estate for UDC, A, R. Morton.

Gateshead.—MH and LG upheld appeal by Gateshead Talmudical College against town council's refusal to sanction two-storey extension to college in Bewick-rd. Work expected to commence soon and plans being prepared by Arthur and Kirkup, 13, Swinburne-st.

Halesowen.—TC approved plans for factory building at Park-la. for Parkes (Machine Tools), Ltd., Witton-rd., Birmingham.

Hebburn (Durham).—RC Tech. Sch. Ctv. A, Durham, (A); 120 houses. S, UDC, H. C. Bestow (A).—Factory extensions, Pyratenax Co., Ltd., Campbell-st.—New club premises, Gasworkers' Club, Carr-st.

Heywood.—BC to prepare layout plans for erection of 200 houses.—Approved plans: Extensions to works at Crimble Mill for J. Kenyon & Son, Ltd.; new building at Heap Bridge Papermills for Yates Duxbury & Sons, Ltd.

Houghton-le-Spring.—Additions covering about 10,000 sq. ft. proposed by North-Eastern Trading Estates, Ltd., Gateshead, to factory at Houghton-le-Spring occupied by N. Hyer, Ltd., gown manufacturers. Proposal still in early stages. A, Holford and Shenning, 80, Bedford-st. South, Liverpool 7.

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Kidderminster.—Worcs EC to invite tenders from selected contractors for erection of Comberton Sch.

Lytham St. Annes.—BC seek Min. approval to plans for erection of crematorium at Park Cemetery.—Approved plans: 4 detached bungalows at Avondale-rd. for E. Slater; 6 bungalows and garages at Warwick-rd. and Berwick-rd. for John Halstead, Ltd.; 8 bungalows at Dorset-rd., Gretdale-ave. and St. Leonards-rd. for W. H. Collier; 14 bungalows at Boston-rd. for S. Riley; 26 bungalows off Mythop-rd. for Lloyds (Lytham St. Annes), Ltd.; block of 18 flats at Clifton-dr. South for W. Wolfson.

Manchester.—TC approved erection of 20 houses at Partridge-ave., Wythenshaw, for Albany Building Co. A, Drury & Gomersall, 207, Oxford-rd., Manchester. Approved two-storey extensions to factory at Chapel-st. and Long-st., Ancoats, for William Dale & Co. Plans by A. L. Townend, 55, Mottram-rd., Stalybridge.—British Legion (Moss Side) Club, Ltd., propose extensions to premises at 345, Moss-la. East, Moss Side. A, Eric Levy, 32, Deansgate, Manchester.—Cimex, Fraser Tuson, Ltd., propose erection of storage and distribution depot at Manchester-rd., Chorley-cum-Hardy. A, Arthur R. Johnson, 11, Peter-st., Manchester, 2.

Middlesbrough.—Following inquiry, MH and LG to allow TC to erect houses on 181 acres of land outside borough boundary at Ormesby.

Newcastle-on-Tyne.—Newcombe and Newcombe, 23, Eldon-sq., A for warehouse, offices, workshop and garage in Grantham-rd., Warwick-st., and Dinsdale-pl., for J. M. and J. Bartlett, and Tyne-Taxis, Ltd.—H. Osborne, Ltd., to erect warehouse, offices and garage in Stoddart-st. and Union-st., to plans by Cackett, Burns Dick and Mackellar, 21, Ellison-pl.—Plans approved for proposed factory at The Fossway for C. A. Parsons and Co., Ltd. Firm prepared own plans.

Nottingham.—Home Brewery Co., Ltd., propose erection of licensed premises at Clifton Estate. A, R. W. Cooper, Russell House, Talbot-st., Nottingham.

Oldham.—C of E Auths. to commence work within next month or so on erection of Mission Church of St. Pauls at Ashton-rd., Fitton Hill estate.

Oswestry.—TC propose erection of further 32 houses at College-rd.

Penrith.—RDC to place contract for building seven houses at Lazonby. S, J. A. Sedgwick, Mansion House.

Prudhoe (Northumberland).—MH approved in principle proposals by Newcastle Hosp. Board, Benfield-rd., Newcastle-on-Tyne, to build employment block (£35,000) and stores block (£50,000) at Prudhoe and Monkton Hosp. A, S. W. Milburn and Ptnrs., 9, Esplanade, Sunderland, in association with P. H. Knighton, Hospital Board's Chief A.

Rainford.—UDC propose erection of houses fronting recreation ground at Ormskirk-rd. and on east side of Junction-rd. A, Gornall, Kelly & Ptnrs., 59, The Albany, Liverpool.

Ripon.—BC appointed Anthony Steel & Owen, 199, Anlaby-rd., Hull, as A for erection of 36 dwellings at Princess Royal-rd.

Rochdale.—Manchester Reg. Hosp. Board approved preliminary sketch plans for new out-patients' department at Rochdale Infirmary.

Rotherham.—BC propose erection of aged persons' hostel at junction Chaucer-rd. and Browning-rd.

Shirebrook.—Derbys CC propose combined youth club and community centre, £12,000 est.

Slough.—New hospital in Wexham Park to have 300 beds and will cost about £1¼m. Outline plans and estimates drawn up by North-West Metropolitan Hospital Board. A. J. Bennett, secretary of Board, stated that there would be extension to hospital now planned as "first stage," but building will not begin before spring of 1958.

Stockport.—EC propose erection of prim. sch. at Meadows-rd., Heaton Chapel.

Stockton-on-Tees.—TC to obtain tenders for construction of 42 houses adjoining Albany-rd. estate. T. C. Hartley, 28, The Square, Stockton, Boro' A.

Sunderland.—Methodist Church proposed on Red House Estate. Plan still in early stages. A, S. W. Milburn & Ptnrs., 9, Esplanade.

Swindon.—Church to be built on new Walcot estate. Vicar of Christ Church, Rev. F. W. Thomas. It will hold about 350. A church hall and curate's house will also be built.

Taunton.—Proposals for £70,000 shopping centre on Priorswood housing estate approved in principle by Taunton TC. Plan provides for three-storey block consisting of 15 shops and petrol filling station and garage on ground floor, with maisonettes above, to be erected to east of junction Dorchester-rd./Eastwick-rd. Layout would permit erection of further block of shops to east of block proposed if necessary later.

Uttoxeter.—RDC propose erection of council chambers at rear of offices at High-st.

Uttoxeter.—UDC to extend contract with present contractor for erection of further 36 houses and to negotiate tender for further 8 houses on former Poor Law site adjoining Holl-rd.—Tenders to be invited for 24 houses fronting south side of Byrds-la.

Wallsend.—Plans approved for new St. John's Church in Station-rd. and contract may be let within two or three weeks. A, G. E. Charlewood, 14, Neville-st., Newcastle-on-Tyne.—J. M. Angus, 21, Lovaine-pl., Newcastle-on-Tyne, A for proposed new premises in High-st. East for Wallsend East End Workmen's Club.

Wednesbury.—TC approved plans for licensed premises at junction Hydes-rd/Chestnut-rd. for Atkinsons Brewery, Ltd.

York.—York Co-op. Society, Ltd., propose reconstruction of premises at Railway-st., Micklegate, North-st. and Tanner-row. Plans by CWS A Department, 1, Balloon-st., Manchester.

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Aberdeen.—100 houses to be erected at Mastrick. Architect, J. Austen Bent, ARIBA, 15, Palmerston-pl., Westend, Edinburgh: *Alexander Hall & Son, Ltd., Northfield Contracting Works, Granitehill-rd., Aberdeen.

Aberdeenshire.—Erection of blocks of houses at various Peterhead sites for the Corpn. Robert D. Cruickshanks, LRIBA, Council Architect. Excavation, brick, building and allied works, *Alexander Cheyne & Co., Ltd., Albert-st., Fraserburgh, £13,299.

Ayr.—88 houses to be erected at Forehill-rd. Development Site. J. Austen Bent, ARIBA, architect, 15, Palmerston-pl., Westend, Edinburgh: *Blackburn (Dumbarton), Ltd., Levenbank, Jameston, Vale of Leven, Alexandria.

Blackwell.—Erection of 42 houses and 18 bungalows at Park-rd. estate, Shirewood, for RDC: *G. Shipman & Co., Ltd., Newlands-dr., Riddings, Derbys.

Bolton.—Erection of new sports pavilion for Trustees of Bolton School: *John Dickinson & Co., (Bolton), Ltd., Fairclough-st., Bolton.

Bothwell.—90 houses to be erected at Walands housing site. Samuel MacColl, ARIBA, architect, Planning and Architectural Department, County-bldgs., Beckford-st., Hamilton West: *Lanarkshire County Direct Labour Department, Albert-st., Motherwell-Wishaw.

Bradford.—Alterations and extensions, etc., to premises of Jackson the Tailor, Newcastle-on-Tyne, in Darley-st.: *Sharp & Law, Bradford.

Bromborough.—Erection of new Emersol plant building at Princes (Bromborough), Ltd.: *John Laing & Son, Ltd., Dalston-rd., Carlisle.

Carlisle.—Erection of 38 bungalows at Morton Neighbourhood Unit for TC: *John Laing & Son, Ltd., Dalston-rd., Carlisle, £32,302.

Chester.—Stage 2 of new Technical College for EC: *Thos. Warrington & Sons, Ltd., Ellesmere Port, £63,842.

Chesterfield.—66 houses at the Pevensey estate for BC: *E. A. & H. A. Tomlinson, Ltd., 62, High-st., Beighton, Derbys, £97,275.

Coventry.—Alterations, equipment and new fronts to premises for Jackson the Tailor, Newcastle-on-Tyne: *Harris & Sheldon, Ltd., Birmingham.

Coventry.—Construction of civic theatre with shops, Corporation-st., for TC: *Geo. Wimpey & Co., Ltd., London, £205,520.

Darlington.—Factory additions on Aycliffe trading estate for North-Eastern Trading Estates, Ltd., on behalf of E.N.V. Engineering, Ltd. Architects, Cordingley & McIntyre, The College, Durham: *D. & J. Ranken, Ltd., Stockton-rd., Sunderland.

Featherstone.—Alterations to wards at Askton General Hospital for Leeds Reg. Hosp. Brd.: *C. Brunt & Son, Cinder-la., Castleford, £7,786.

Fifeshire.—Erection of houses in blocks of multi-storey buildings to be erected at the Links development district. Robert Meldrum, AMInstCE, AMTPI, Council Architect, Master of Works Offices, Kirkcaldy: *W. G. Wimpey & Co., Ltd., 37, Durmsheugh-gdns., Westend, Edinburgh.

Gateshead.—Erection of 6 shops, 6 flats and 2 houses in Albert-dr.: *M. S. Failes, Ltd., 199, Coatsworth-rd., Gateshead.

Glasgow.—Extensions, etc., estimated to cost £350,000, to be constructed for Scottish Daily and Sunday Express at Albion-st. Architects, Sir Owen Williams & Ptnrs., FRIBA, 44, Park-rd., London: *A. A. Stuart & Sons (Glasgow), Ltd., 2375, London-rd., Mount Vernon, Lanarkshire.

Halesowen.—20 houses at Fatherless Barn estate for TC: *Shaw Bros., Park-la., Cradley, £27,213.

Hamilton.—Erection of business premises for Hamilton Central Co-operative Society, Ltd. (at an estimated cost of £26,000) at Neisland-dr. and Laighstonehall-rd. Kenneth Masson, FRIBA, architect, Co-operative Offices, Paisley-rd., Glasgow, SC1; and Macintosh and Robertson, F.FSI, 6, Cadzow-st., The Cross, Hamilton. Excavation, brick, building and allied works, *John C. Burns & Co., Ltd., 200, Quarry-st., Hamilton.

Heywood.—Extensions at the Public Market for TC: *Ashton and Bowker, Heywood.

Jarrow.—Erection of warehouse of 17,500 sq. ft. on Bede Trading Estate for British Crêpemakers & Paper Products, Ltd. Architects, Newrick & Blackbell, John-st., Sunderland: *George Henderson, East Boldon, Co. Durham.

Jarrow.—Additions to factory for Abbott Laboratories, Ltd., Bede Trading Estate. Architects, Spence & Price, 26, St. Mary's-pl., Newcastle-on-Tyne: *R Jordan, Back Queen Alexandra-rd., North Shields. (Work proceeding.)

Jarrow.—Alterations and improvements, Civic Hall. Cost about £14,000: *Direct labour. (Boro' E. H. W. T. Perkins.)

Lambeth.—Completion of original scheme for Bridge House, Albert Embankment, SE1, prepared by Ellis, Clarke and Gallannaugh, F/FRIBA, for W. H. Smith and Son, Ltd., Strand House, WC2. Final stage involves erection on site of demolished Doulton Institute of a six-storey building connecting up with the main building, with an additional storey giving about 18,500 sq. ft. extra floor space. Replanning of building's interior, with extensions, was prepared by the architects in close collaboration with A. J. Dray, of the Estate Department of W. H. Smith and Son. QS is Sidney C. Gordon. *Holland and Hannen & Cubitts, Ltd.

Leyland.—Six shops and 6 maisonettes, Broadfield estate, for UDC. E&S, F. D. Howe, MIMunE: Middleton & Co., Ltd., Blackpool; C. & W. Berry, Ltd., Leyland; Naylor & Walkden, Ltd., Adlington; *Marland Bros., Ltd., Leyland, £26,671.

Leyland.—6 shops and 6 maisonettes, Wade Hall estate, for UDC. E&S, F. D. Howe, MIMunE: Wunston & Ptnrs., Ltd., Leyland; Marland Bros., Ltd., Leyland; C. & W. Berry, Ltd., Leyland; Naylor & Walkden, Ltd., Adlington; *G. & J. Seddon, Ltd., Coronation-bldgs., Little Hulton, Walkden, nr. Manchester, £26,884.

Lichfield.—Erection of television station for ITA: *James Crosby & Sons, Ltd., Dalston-rd., Carlisle.

Liverpool.—Construction of new transport dept. at Studholme-st. for British Road Services: *Wm. Moss & Sons, Ltd., Roscoe-st., Liverpool.

Llanidloes.—Rebuilding of the New Chapel Baptist Church: *D. M. Jones & Son, Llanidloes, £7,830.

¶London (Admiralty).—Contracts placed by Civil Engineer-in-Chief's Department, Admiralty, for over £1,000 in value:—

Hampshire: Building work, Faulkners of Waterlooville, Waterlooville, Hants; Keith Andrew & Co., Ltd., 7, Warwick-st., Worthing, Sussex; civil engineering work, John Mowlem & Co., Ltd., 91, Ebury Bridge-rd., SW1. *Devon*: building work Staverton Builders, Ltd., Totnes, Devon; Hadsphaltic Construction Co., Ltd., Ibex House, Minories, EC3. *Dorset*: construction of roads, etc., Perry & Perry, Ltd., Beaminster, Dorset. *Stirlingshire*: roof linings, E. Gibbon & Sons, Ltd., 14, Annfield-pl., Glasgow, E1. *Fifeshire*: building work, James Miller & Partners, Ltd., 18, George-st., Edinburgh, 2; cable trenching, James Ritchie & Son, Buffies Brae, Dunfermline; roadworks, H. V. Smith & Co., Ltd., 66, Hanover-st., Edinburgh, 2.

¶London (Air Ministry).—List of new works contracts to the value of £500 or over for the week ended August 20:—

Repairs to runways: W. & J. Glossop, Ltd., 123, East Hill, Wandsworth, SW18. *Painting work*: Arnold Sharrocks, Ltd., 229, Spotland-rd., Rochdale, Lancs. *Heating and hot water installation*, Industrial & General Eng. Co., 11A, St. John's Hill., Clapham Junction, SW11. *Artificers' work*: F. Parkinson, Ltd., Mowbray-dr., Blackpool; F. Shepherd & Son, Ltd., Blue Bridge-la., York.

London Midland Region.—British Railways announce that the following contracts have been placed:

*L. Fairclough & Co., Ltd., 3, Chapel-st., Adlington, Lancs, for the construction of concrete deck and catch points for the intersection bridge between Clay Cross and Cudworth on the Derby-Leeds line.

*C. R. Price, Barnsley-rd., Doncaster, for new roof coverings and accommodation at Hanley Station and for renewal of roof coverings at Preston Station.

*Fletcher & Co. (Contractors), Ltd., Forest-rd., Mansfield, Notts, for reconstruction of bridge No. 83 on Erewash Valley line.

¶London (MoW).—Contracts placed by MoW for week ending August 13:—

Bedfordshire: Ministry of Supply Storage Depot, Elstow, internal cleaning and painting, Woolnough & Son, Ltd., 401, Harlestone-rd., Northants. *Berkshire*: HMS "Dauntless," Clavhill, Burghfield, internal and external painting, Fields, Ltd., 248, Kings-rd., Reading. *Flintshire*: Ministry of Health No. 3 Polish Hospital, Penley, nr. Overton, external painting, Norman Oldham, Ltd., 43, Brunswick-st., Cardiff. *Glamorganshire*: Merthyr Tydfil, erection of a telephone exchange, Frank Batty & Smith, Ltd., 18, Spring-st., London, W2. *Hertfordshire*: Sorting Office and Garage, Clarendon-rd., Watford, external and internal decorations, Alfred Bagnall & Sons, Ltd., 141, Uxbridge-rd., W12. *Lancashire*: Ministry of Labour, 66, Sankey-st., Warrington, adaptations, P. Hamer, Ltd., Park-st., Swinton, Lancs; Post Office, Seaforth SO, Seaforth Vale-rd., Liverpool, extensions, James Tomkinson & Co., Ltd., 22, Rose-common-st., Liverpool, 5. *London*: Home Office, Whitehall, SW1, internal decorations, A. Roberts & Co., Ltd., 79, Eccleston-sq., SW1; Faraday Building, NE Block, Knightrider-st., EC4, internal decorations, J. W. Green (Painters), Ltd., 171, Graham-rd., SW19; Government Buildings, Kidbrooke, SE3, sheds 30 and 33 internal decorations, Sykes & Son, Ltd., 8, Essex-st., Strand, WC2; PO Factory and Supplies Dept., Studd-st., N1, internal and external decorations, South London Decorators, Ltd., 9, Streatham High-rd., SW16; Great Westminster and Stanley House, SW1, internal decorations, Clark & Fenn, Ltd., 16, Old Town, Clapham, SW4. *Northumberland*: PO Central TE, Carliol-sq., Newcastle upon Tyne, internal cleaning and redecorations, Nicholson & Ritchie, 26, Gosforth-st., Felling, Gateshead, 10. *Nottinghamshire*: MoW Store, Asher-la., Ruddington, external painting, A. Bagnall & Sons, Ltd., 7, Market-st., Shipley, Yorks. *Oxfordshire*: Cold Store, Grimsby-rd., Banbury, asphalt roofing, Cambridge Asphalte Co., Ltd., Swann Rock, Cambridge. *Staffordshire*: Post Office, Cross-st., Kingswinford, erection of ATE, T. W. Edwards & Sons (Audnam), Ltd., Audnam, Stourbridge. *Warwickshire*: Post Office Factory, Sherlock-st., Birmingham, internal painting, Alfred Bagnall & Sons, Ltd., Navigation-st., Wolverhampton. *Yorkshire*: MLNS and MPNI, Normanton, erection of office building, J. Pullan & Sons, Ltd., Marley-ter., Leeds, 11.

¶London (War Dept.).—Contracts placed by War Department for week ended August 13:—

Cheshire: Roadwork, Neuchatel Asphalte Co., Ltd., Chester. *Cumberland*: Miscellaneous, Building and Repairs Co., Carlisle. *Derbyshire*: Miscellaneous, R. A. Wheeldon & Son, Stanley Common. *Co. Down*: Painting and decorating, A. C. Simpson, Armagh. *Essex*: Roadwork and hardstandings, E. E. Cross & Son, Gidea Park; painting, Donald Humberstone & Co., Ltd., Louth. *Hampshire*: Roadwork, Taroads, Ltd., London, and Thames Tar Products and Contractors, Ltd., Croydon. *Hertfordshire*: Building work, G. T. Crouch, Ltd., Leatherhead. *London*: Building work, H. Goodsell, Maidstone; miscellaneous, Marchant Hirst & Co., Ltd., London. *Nottinghamshire*: Road work, J. Searson, Ltd., Sutton-in-Ashfield. *Shropshire*: Painting and decorating, T. E. Talbot, Burslem. *Somerset*: Painting and decorating, T. H. Kenyon & Sons, Ltd., *Exeter*: Building work, H. W. Pollard & Sons, Bridgwater. *Surrey*: Restoration of stonework, Peter Cox & Ptnrs., Ltd., London; building work, J. B. Edwards & Co. (Whyteleafe), Ltd., Kenley. *Sussex*: Miscellaneous, Kinman (Contractors), Ltd., London; miscellaneous, Charles T. Pratt, Selsey. *Warwickshire*: Building work, Spicers (Builders), Ltd., Worcester. *Wiltshire*: Heating and hot water installation, Boilers (Coventry), Ltd., Coventry; painting and decorating, C. A. Hayes & Sons (Painting), Ltd., Bristol. *Yorkshire*: Miscellaneous, Jaram & Son, Scarborough: domestic water supply, F. P. Tarran, Ltd., Hull.

Macclesfield.—Five police houses on 3 sites for Cheshire CC: *H. Rochford, Gawsworth, £4,060, £3,988 and £2,030. Houses at Hurdsfield estate for TC; 71 and 19 garages: *Sparkes and Yearsley, Ltd., Congleton, £93,969. 15: *Macclesfield Builders' Association, £19,509. 8: *Cooper Bros. & John Clayton, Ltd., Macclesfield, £10,699.

Manchester.—Following for Reg. Hospital Brd.: New offices at Monsall Mills, Monsall-rd., for Wm. Hall & Co. (Monsall), Ltd.: *Robert Carlyle & Co., Ltd., Elsinore-rd., Trafford Park, Manchester.

Middlesbrough.—Erection of 2 shops and houses in Acklam-rd. Architect, T. A. Crawford, 80, Borough-rd., Middlesbrough: *L. Conolly, Ltd., York-rd., Middlesbrough.

Newbury.—Garages and engineering workshops for Southern Electricity Board. Engineer-in-charge, H. C. Young: *J. M. Jones & Sons, Ltd., Highway Works, Maidenhead, £63,836.

Newcastle-on-Tyne.—Block of offices on site of Rendezvous Restaurant, Pilgrim-st.: *R. W. Bell & Son, Mistletoe-rd., Newcastle.

Newcastle-on-Tyne.—Large block of business premises and offices, Northumberland-st., for Barratt & Co., Ltd., boot and shoe manufacturers: *Myton, Ltd., Hull.

Newcastle-on-Tyne.—Erection of radiological wing and neuro-surgical department (5,200 sq. ft.) at Newcastle General Hospital for Newcastle Hospital Board, Benfield-rd., Newcastle. P. H. Knighton, Chief A: *R. Bowey & Son, 34, Great North-rd., Newcastle-on-Tyne, £27,523 (lowest of ten tenders).

Newcastle-on-Tyne.—Erection of 18 houses at Kenton Park, Montague estate: *Cussins, Ltd., The Drive, Gosforth.

Newcastle-on-Tyne.—Offices and sanitary accommodation for Brandling Laundry: *Gofton & Sons, Front-st., Monkseaton.

Penrith.—Erection of Hunter House for Cumberland CC: *R. E. Reay & Son, Brent House, Fell-la., Penrith, £11,066.

Peterlee.—136 houses for Dene House development for Dev. Corpn. Architect, Joseph S. Allen, FRIBA, MTPI, in conjunction with J. Scott, Dip.Arch. FRIBA (Chief Architect, Peterlee Development Corporation). Quantities by G. J. Antcliff. ARICS.

R. C. Williamson, Ltd., Rowlands Gill	£238,163
Thomas Armstrong, Ltd., Newcastle-on-Tyne, 6	229,922
Geo. Wimpey & Co., Ltd., Newcastle-on-Tyne	226,035

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L. W. Evans (Contractors), Ltd., Sunderland 211,328
*Lane Fox & Co., Ltd., Sunderland .. 211,154

Portobello.—Erection of Midlothian maintenance department and motor repair buildings for British Railways: *Thomas Berland & Co., Ltd., 21, Haddington-pl., Edinburgh.

Ringwood.—Four houses at Burnt House-la., Bransgore and 18 dwellings at Warnes-la., Burley, for Ringwood and Fordingbridge RDC. Architect, F. Andrews, LRIBA, 58, Southampton-rd., Ringwood, Hants. *The New Forest Construction Co., Christchurch-road, New Milton.

Rotherham.—Erection of new shopping centre at the Kimberworth Park estate for BC: *C. Earnshaw (Rotherham), Ltd., 35, Coke-la., Rotherham, £69,000.

Rugby.—Three shops with storage accommodation over the Market Place for Ravensoft Properties, Ltd.: *Bosworth and Wakeford, Ltd., New-st., Daventry.

Scottish Special Housing Association.—Contracts placed between May 18 and June 22:—

House Erection.—Lintwhite, Bridge of Weir (28 Blackburn), Scottish Gas Board, Johnstone, gas. Mains-rd., Beith (28 Stuart), Scottish Gas Board, gas (mains to meter). Mains-rd., Beith (72 Stuart), Stuart & Sons, 7, Fitzroy-pl., Glasgow, all trades. Borestone, Stirling (56 No-Fines), South of Scotland Electricity Board, St. Ninians-rd., Stirling, electrical. Grainger-st., Lochgelly (48 Cruden flats), Alliance Construction Co., 7, Ward-rd., Dundee, all trades. Fairfley, Clydebank (2 Miller), James Miller & Ptnrs., Edinburgh, all trades. Mains of Fintry, Dundee (210 flats), North of Scotland Hydro Electric Board, Dudhope Crescent-rd., Dundee, electrical. Taymouth Castle, Kenmore (3 Traditional), John Fraser & Son, Main-st., Invergowrie, electrical.

Maintenance.—Paint work:—

Shortlees, Kilmarnock (68 Concrete), and Shortlees, Kilmarnock (58 Traditional), R. Torrance & Son, 20-22, Polwarth-st., Galston. Chryston, Lanarkshire (110 Traditional), J. McAteer, 49, Gairbraid-ter., Bargeddie. Gorebridge, Midlothian (142 Dunedin), T. W. Scott, Edinburgh. Mayfield, Saltcoats (100 Cruden), John Grant & Sons, 852, Argyle-st., Glasgow. Laighstonehall, Hamilton (52 Wilson), John McLaren, 13-17, Muir-st., Hamilton. Fallin, Stirlingshire (18 Swedish timber), M. C. Greenhorn, Bannockburn. Netherthird, Cumnock (84 Atholl brick), Alexander Pollock, 68, Elizabeth-cres., Cumnock. Shortlees, Kilmarnock (32 Wilson), R. Torrance & Son, 20-22, Polwarth-st., Galston. Northfield, Aberdeen (74 Cruden), James Chapman, 21, Thomson-st., Aberdeen.

Mountfleurie, Leven (100 traditional), Neil Nicholson, 12, Whytehouse-ave., Kirkcaldy. Penicuik, Midlothian (90 Cruden), A. D. Lamb & Son, 18, Springwell-pl., Edinburgh. Townhead, Coatbridge (52 concrete), and Bellsdyke, Airdrie (36 concrete, 20 traditional), J. R. Berwick, 7, Gartsherrie-rd., Coatbridge. Rankinston, Ayrshire (8 traditional), W. C. Small, 29, Knoweland, Dalmellington. Race Road, Bathgate (76 Swedish timber), and Newton, Bo'ness (56 Swedish timber), George Lindsay & Co., 30-32, Morrison-st., Edinburgh.

Sheffield.—Erection of the William Temple Church, Manor Park, for Diocesan Board of Finance: *A. Bradbury & Son, Ltd., 334, Cemetery-rd., Sheffield.

Stockport.—Occupation centre at Adswood for TC. BS. Town Hall: *F. Williamson, Ltd., 128, Higher Hillgate, Stockport, £20,669.

Sunderland.—Conversion of St. Aidan's Works into clothing factory for Jackson the Tailor. Cost about £15,000: *Shield Bros., Ltd., Back Park-ter., Swalwell, near Gateshead. It is proposed later to extend factory and build offices. Stephenson and Gillis, Saville-chbrs., North-st., Newcastle-on-Tyne, architects.

Wakefield.—Alterations to premises at Upper Kirkgate for Boots Cash Chemists, Ltd., Nottingham: *W. J. Simms, Sons and Cooke, Ltd., Nottingham.

Walthamstow.—Conversion of 8 houses, Carisbrooke-rd., into 31 flats for BC. Borough Architect, Engineer and Surveyor, F. G. Southgate: *Yates (Bcw), Ltd., Fairfoot Works, Fairfoot-rd., Bow, E3.

Walthamstow.—Offices, shops and flats, etc., junction, Hoe-st. and Church Hill, for BC. Borough Architect, Engineer and Surveyor, F. G. Southgate: *Davies Bros. (Buckhurst Hill), Ltd., 167, Queen-rd., Buckhurst Hill, Essex.

Wanstead and Woodford.—Dwellings, Waltham-rd., Woodford Bridge, for BC. Tooley & Foster, architects, Midland Bank-chbrs., Buckhurst Hill. Quantities by Thurgood, Son & Chidgey:

Barklems, Ltd., Palmerston-rd., E17	£145,256
H. C. Horswill, Ltd., Green-st., E7	138,038
Circle Construction Co., Ltd., Wembley	128,980
G. Hudson & Co. (Builders), Ltd., Peel-rd., E18	128,530
Catchpole & Co., Ltd., Potters Bar, Middx	116,995
†Jenners (Builders), Ltd., Woodford Bridge	112,250

West Hartlepool.—Heating installation in connection with additions to Rift House County Primary School for the EC: *E. Dixon Barker & Son, Ltd., West Hartlepool.

Whitby.—Erection of 8 houses at Staithes for the RDC: *F. J. Willis & Son, Hinderwell, £9,472.

Whitehaven.—Erection of C of E Church at Mirehouse: *John Laing & Son, Ltd., Dalston-rd., Carlisle.

Wolverhampton.—Alterations and new fronts, etc., to tailoring premises of Jackson the Tailor, Newcastle-on-Tyne: *R. L. Rae, Ltd., Edinburgh.

Wolverhampton.—Erection of church at Pendeford-ave., Aldersley, for Rev. C. W. Borrett: *Henry Willcock & Co., Ltd., Darlington-st., Wolverhampton.

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